Service Manual

Colour Television

Models: **CE28FN1-E**
CE25FN1-E
CE21FN1-E

CRT 28” A59EAK071X11
CRT 25” A66EAK071X11
CRT 21” A51EAL155X10
CRT 21” A51EAL155X11

CHASSIS No 2103
EB5-A

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Give complete “SERVICE PART No” for parts order or servicing, it is shown on the rating sheet on the cabinet back of the TV set.

Note
This TV receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specifications for the design specifications.

16-11-1998

Ref. Nº **MS CE25FN1-E**

1. Safety instructions

Read this page before doing any operation of adjustment, maintenance or repair the TV set described.

Only skilled personnel of Sanyo Technical Service should do the adjustment, maintenance or repair of TV set.

2. WARNING

For the correct and safe use of the TV set, it is essential that the service personnel follow the process of safety generally accepted and the safety precautions specified in this manual.

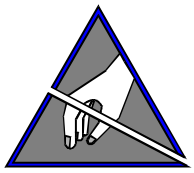
An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary side of the converter transformer of the set.

3. Precaution against X-Rays

The primary source of X-RADIATION in the television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. If high voltage exceeds specified limits, take necessary corrective action. Follow the instructions carefully for +B1 volt power supply adjustment, and high voltage adjustment to maintain the high voltage within the specified limits.

COMPLIANCE TO STANDARDS

All of those marked with ✷ or ⚠ must be replaced with original parts



WARNING! This TV set contains components which are particularly sensitive to static electricity (ESD). It is recommended that all due precaution be taken handling integrated circuits and semiconductors.

4. Technical characteristics

Cathode-ray tubes	21" (54 cm) Model **CE21FN1-E** 25" (65 cm) Model **CE25FN1-E** 28" (70 cm) Model **CE28FN1-E** In-Line gun type. Black Matrix.
Tuning system	Voltage synthesis, 100 programs in non volatile memory, AFT, fine tuning (first 10 programs), automatic, semiautomatic and manual channel search.
Program selection	Sequential selection from the controls on the set. Direct selection of any program from the remote-control device.
Receiving channels (Cable and Aerial)	Band I channels E2 ... E4; S1 ... S10; Band III channels E5 ... E12; S11 ... S41; Band IV-V channels E21 ... E69.
TV system	B/G and D/K systems
Colour system	PAL, NTSC 4.43
Audio power	2 x 8 W rms, 10% distortion
Speakers	2 x 8 Ω, full range
Aerial	External aerial-socket 75 Ω IEC.
Headphones	Jack stereo 3,5 mm (with independent control).
AV connectors	1 SCART connector 21-pin, standard CENELEC AV and RGB. 1 SCART connector 21-pin, standard CENELEC AV and S-video. 1 RCA type Video input (front). 2 RCA type Audio R/L input (front).
Power source	220 Vac ... 240 Vac, 50 Hz.
Power consumption	108 W (maximum).
CE25FN1-E and CE28FN1-E	72 W (IEC 107-1) 2.5 W (stand-by).
Power consumption	87 W (maximum).
CE21FN1-E	65 W (IEC 107-1) 2.3 W (stand-by).
STEREO Systems	Nicam and A2.
Sound effects	Active 3D Surround. Pseudo Stereo. Bass boost. Auto volume
Comb Filter	Models **CE25FN1-E** and **CE28FN1-E**
Clock function	Auto capture from teletext.
Alarm function	Programmable over 24 hours.
Timer function	Switch on and off are programmable over 24 hours.
Teletext	Level 1.5 Flof, Top and List. 10 teletext pages memory. East european TXT included.
Hotel mode	Can be programmed in Hotel and Hotel Rental mode.

5. Safety

It fulfils the safety requirements established in the regulation:

- EN 60065:93

6. EMC (Electromagnetic Compatibility)

It fulfils the EMC requirements established in the regulation:

- EN 55013:1990/A12:1994
- EN 55020:1994
- EN 60555-2:1987

7. Factory special mode

The factory mode is a special TV working mode intended to help in the manufacturing process and it is identified on the screen with the message “FAC”. This mode is never suited for customer use.
The main differences respect to normal mode are:

1- The standby mode is always disabled.
2- The Blue-back (no sync. signal present) is disabled.
3- The customer adjustments (volume, contrast …) work faster.

In case of finding the TV set in Factory mode, it must be taken out of this state. To do so, enter the clock setting menu on the customer OSD and then exit.

8. “HOTEL” and “RENTAL” modes

The TV set has a special mode of operation that is adapted for use in hotels, hospitals… Its main purpose is to avoid the manipulation of the basic TV settings. This mode is stored in NVM, so it is maintained even though the TV set is disconnected from the mains.
Its main features are:

1. The maximum volume level is limited to the volume chosen when the mode is entered.
2. Channel searching and fine tuning are disabled.
3. The TV set always switches on with the normalisation settings and users can not memorise any of their personal preferences.
4. Language selection and child lock are disabled.
5. It is possible to force the TV set to always switch-on in a selected program between the 1st and 8th or AV1.

To activate this mode, hold down the “VOL -” front key and simultaneously, press the “RECALL” remote control key. A message like “ HOTEL: 00 “ will appear waiting for two digits entry.
The most significant digit indicates the selected mode:

‘0’: normal mode ‘1’: HOTEL mode ‘2’: RENTAL mode

The second digit indicates the programme in which the set will switch on:

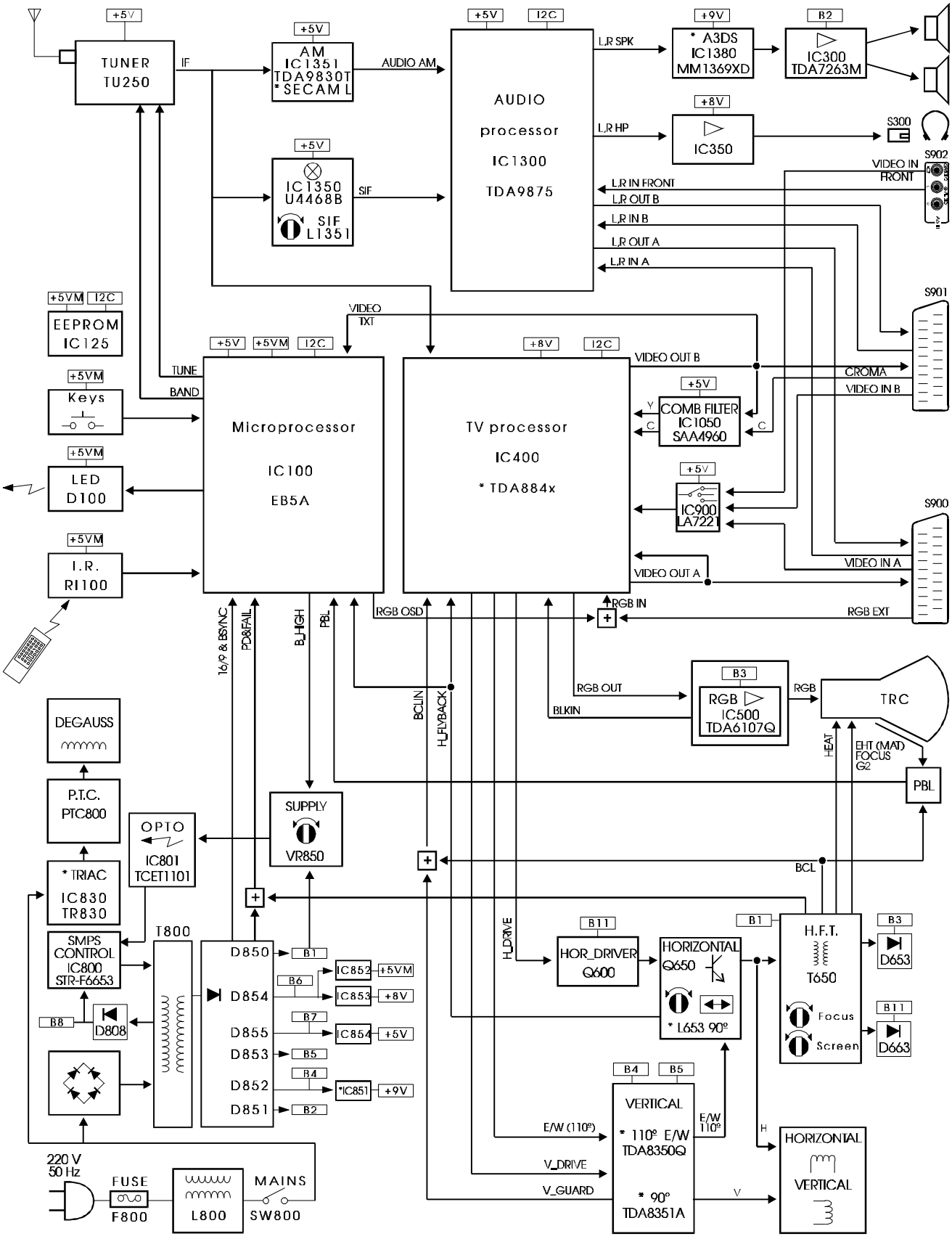
‘0’: the same as it was selected when the TV set was switched off (normal mode)
‘1’ to ‘8’: always this programme selection (1 to 8).
‘9’: always AV1 mode

The ‘RENTAL’ mode has the same features as the ‘HOTEL’ mode and additionally the front keys are inhibited so it is only possible to change the program with the remote control. In order to exit from this mode, the colour saturation level must be set to zero.

9. Automatic channel search reactivating

In order to reset the initial automatic channel search function, start a channel search in AUTO mode from the user tuning menu and switch-off the TV set before any station is found. The next time the TV set is switched on, it will start an automatic channel-search.

10. Block diagram



*OPTION: DEPENDING ON MODEL

11. Power supply

First, let's define some TV states or working modes to clarify later explanations:

State	Description
SMPS_B_LOW	The power supply is in low consumption (low voltage). The deflection is stopped.
SMPS_B_HIGH	The power supply works at nominal voltage. The deflection can be on or off.
STANDBY	The micro stops "B_HIGH" port oscillation and the power supply is on "SMPS_B_LOW".
ON	The power supply is on "SMPS_B_HIGH" and deflections are on.
ERROR_N	Protect situation. The power supply is on SMPS_B_LOW and the micro shows the error by the led indicator. The TV is not allowed to switch-on (except ERROR_5).

The power supply works in switched mode with "flyback" self oscillating topology and with control in current mode. The outputs of the source are shown in the block diagram. Also there are:

- B8: feeds the power supply controller. The initial source in switch-on situation is extracted through R803+R816.
- B9: feeds the optocoupler primary part.

The power supply sends two signals to the micro processor:

- -PD&FAIL: Switch-off immediately (mains off).
- 16/9&BSYNC: Mains pulses synchronism and 16/9 control. The micro analyses this line in order to switch correctly from SMPS_B_LOW to SMPS_B_HIGH.

In STAND-BY mode all the voltage outputs are reduced except the microprocessor supply (it remains at 5 volts). The triac TR830 disconnects the PTC800 supply.

12. Microprocessor and Teletext

The microprocessor (IC100) main tasks are the following:

- video processor control
- audio processor control
- NVM access
- IR decoding
- Teletext processing and display
- OSD generation
- tuning and AFT
- failure checking
- …

13. Video processor/Comb filter

The video processor (IC400) has the following functional blocks: video Intermediate frequency, mono sound (not used), vertical and horizontal synchronism, geometry processor, video switching and filtering, colour decoder and RGB processing. All the adjustments are performed by the microprocessor via the I2C bus.

13.*1 Video Intermediate Frequency Section*

- I.F Amplifier: The input signal comes from the tuner (TU250) through the S.A.W. filter SF200 (band pass filter of the video information and the picture carrier.
- PLL Demodulator and VCO: The VCO does not need any adjust neither external coil. The frequency adjustment is performed through the I2C bus. The components associated with the PLL are connected to the pin 5 (PLLLF).
- Video buffer: The demodulated video signal is present at pin 6 (IFVO) with a typical level of 2Vpp.
- AGC: It controls the IF amplifier gain in order to maintain its amplitude constant. The capacitor connected to the pin 53 (DECAGC) determines the AGC time constant.
- Tuner AGC: It reduces the gain when a high level aerial signal is received. The level at which this reduction is performed is I2C bus adjusted (AGC in the service menu).
- AFC: The AFC information is accessible via I2C bus.
- Video identification: The video identification information is accessible via I2C bus.

13.*2 Horizontal and vertical synchronisation*

- Horizontal sync separator
- Horizontal oscillator: it is internal and only needs the crystal oscillator X400 as a reference frequency.
- PHI-1 detector: It is a PLL that synchronises the horizontal oscillator with the video signal. The components associated with the PHI-1 are connected to the pin 43 (PH1LF). The PHI-1 time constant and the noise

detector are controlled via I2C bus.

- PHI-2 detector and Sandcastle generator: The PHI-2 detector performs a stable picture. It synchronises the horizontal oscillator with the horizontal flyback signal (pin 41, FBISO) to generate the horizontal output (pin 40, HOUT). . The components associated with the PHI-2 are connected to the pin 42 (PH2LF). The picture phase is adjusted via I2C (HOR SHIFT in the service menu). The flyback input pin 41 (FBISO) is combined with the sandcastle output and provides a three level sandcastle signal. The levels are: 2V → vertical retrace; 3V→ horizontal retrace; 5.3V →Burstkey.
- Horizontal output (pin 40, HOUT): It is a open collector type and the duty cycle in normal condition is 45% high and 55% low. A built in slow start/stop circuit ensures a smooth start/stop behaviour of the line deflection. Also during switching off via stand by the RGB drive is set to maximum to discharge the EHT CRT capacitance.
- Coincidence detector
- Vertical sync separator
- Vertical divider

13.*3 Geometry*

- Vertical sawtooth generator: it delivers the reference signals for vertical and horizontal geometry processor. An accurate reference current is used to charge the external capacitor during vertical scan. The resistor R426 in pin 52 (IREF) determines this reference current. It is a Metal Film resistor with 1% tolerance in order to provide a temperature stabilisation and lower dispersion. The ramp capacitor (C425) is connected to pin 51 (VCS). It is a polycarbon one in order to provide temperature stabilisation.
- Vertical geometry processor: it performs the sawtooth signal and it has a differential current output in pins 47 (VDRA) and 46 (VDRB) for a DC coupled vertical output stage (drive). Control functions accessible via I2C are VERT SLOPE, VERT AMPL, S-CORREC, VERT SHIFT (see service menu).
- Horizontal geometry processor (E/W drive): it has a single-ended current output for E-W drive (pin 45 EWD). This current is amplified and applied to the diode modulator of the horizontal deflection. The adjustments are accessible via I2C (EW AMPLIT, PARABOLA, CORNER PAR, TRAPEZIUM in the service menu).
- EHT tracking (pin 50, EHTO): this tracking makes the picture size independent of EHT variations due to the beam current.

13.*4 Filters and video switches*

- Video signal selection: the input selector has CVBS_INT(pin 13), CVBS_EXT (pin 17), CVBS/Y (pin11) and CHROMA (pin 10) as inputs which can be selected via I2C bus. The selected video signal is present at pin 38 (CVBSO).
- Filter calibration: it is an auto-tuning loop which calibrates every field retrace. The filters are the chrominance bandpass and the chrominance trap.
- Chrominance signal processing: this circuit keeps constant the colour saturation level.
- Luminance signal processing: the selected video signal is supplied to the chrominance trap. The output signal is supplied to the peaking and coring stages. Both are controlled via I2C bus. The output (pin 28 LUMOUT) is fed through a band pass filter (L409, R439 and C440) as internal luminance signal (pin 27 LUMIN).

13.*5 Colour decoder*

- PLL/VCXO: The PLL operates during the burstkey period. In the lock condition the VCXO reference signal (X400 in pin 35) and the burstkey become synchronous. An optimum transient response can be chosen with the loop filter connected to pin 36 (DET). The reference output (4,43MHz in pin 33) can be used for comb filter applications.
- PAL/NTSC Demodulation: The reference signals from the VCXO are supplied to the HUE phase rotator; its outputs are supplied to the (R-Y) and (B-Y) demodulators. The (B-Y)/(R-Y) baseband signals are filtered and supplied via the PAL/SECAM switch to the internal baseband delay line. The signals from the delay line are RYO (pin 30) and BYO (pin 29).
- SECAM Demodulation: It is realised with a PLL type demodulator. The SECAM reference voltage is generated at pin 16 (SECPLL). The demodulated signal is distributed to the (R-Y) and (B-Y) amplifiers and via de PAL/SECAM switch to the baseband delay line.
- Automatic system manager: it can identify PAL/SECAM/NTSC colour standards. The different possibilities are controlled by the I2C bus.

13.*6 RGB Processing*

- (R-Y)/(B-Y) processing/matrixing: The amplitude of this signals (pins 32 (RYI) and 31 (BYI)) is controlled via the I2C bus (colour saturation) and also this signals are supplied to dynamic skin control. After the R-Y and

B-Y matrixing, the output signals are added with the luminance signal in order to generate the internal RGB signals.
- RGB selector: it is controlled by the FB signal in signal 26 (RGBIN). The external RGB signals are present in pins 23 (RI), 24 (GI) and 25 (BI). The RGB selector output is fed to then RGB control.

13.*7 RGB Control*

- Contrast and brightness control: There are I2C bus controlled. These adjustments can be reduced by the beam current limiter stage. Furthermore, contrast is affected by the Peak Beam Limiter (Q670 and Q671 circuitry). This circuit's output is the PBL signal to microprocessor's pin 11 and must be 5V with a black pattern on the screen.
- Beam current limiter/vertical guard: The BCLIN (pin 22) input circuit functions as an average beam current limiter as well as a peak white limiter. The vertical deflection works correctly when there is a pulse level above 3.7V during the vertical retrace. The vertical guard function can be I2C controlled. The contrast and brightness reduction begins when BCLIN level is below 3.0V and 2.0V respectively.
- Continuous cathode calibration (AKB): it is divided into two loops: a black level stabilisation and a cathode drive stabilisation. Each gun of the CRT is stabilised sequentially and independently and a feedback current flows to the black current input (pin 18 BLKIN) supplied by the RGB amplifier (IC500). In order to change the cathode levels at the picture tube three I2C bits are available.
- White point adjust and blue stretcher.

13.*8 Supply and bandgap decoupling*

The IC400 has two supply pins 12 and 37. Both pins must be supplied simultaneously. The nominal supply voltage is 8V. The pins 14 and 44 must be connected to ground.
The bandgap circuit provides a very stable and temperature independent reference voltage that ensures optimal performance of the video processor. Short decoupling (pin 9 DECBG) to pin 14 of the external capacitor is important for stable horizontal drive.

The comb-filter (IC1050) is only performed with a PAL signal. To enhance the image quality its main features are: cross colour reduction (only at vertical frequencies), cross luminance reduction and improved video bandwidth.
The input signal is composite video. It comes from the IC400 (pin 38 CVBSO) to the pin 17 (YEXT/CVBS). It is processed internally and the resultant signals are Luminance (pin 14 Y0) and chrominance (pin 12 C0). These signals return to the colour decoder in the video processor. The comb-filter is switched on through the I^2C bus by writing a bit in the video processor. This one outputs a 4,43MHz signal on the REF0 port superposed to a high level one.
With SECAM, NTSC or S-VHS signals the comb-filter is disabled. It bypasses the luminance (pin 17 -YEXT/CVBS- to pin 14 -YO-) and chrominance (pin 10 -CEXT- to pin 12 -CO-) signals. The video processor outputs a low level on pin 33.
In the models without the comb-filter, the jumpers JO1050 and JO1051 bypass the signals.

14. Audio processor/A3D Surround/Output amplifiers/Sound IF

The audio processor (IC1300) is controlled via I^2C bus. It has 3 main sections: analog, digital and DSP (digital signal processing).
- The analog part takes: audio input and output switching, A/D and D/A conversion of input/output sound signals.
- The digital part: demodulates FM (multistandard) and decodes the two carrier signals, controls the sound IF AGC, demodulates DQPSK (multistandard) and decodes NICAM.
- The DSP section takes: sound controls, sound effects for loudspeakers, mute for loudspeakers and headphones, beeper (alarm function) and digital audio switching matrix.

The IC1380 produces the Active 3D Surround (A3DS) effect. The models without A3DS effect use the jumpers JO1381 and JO1382 to bypass the audio signals to the audio amplifier for loudspeakers.

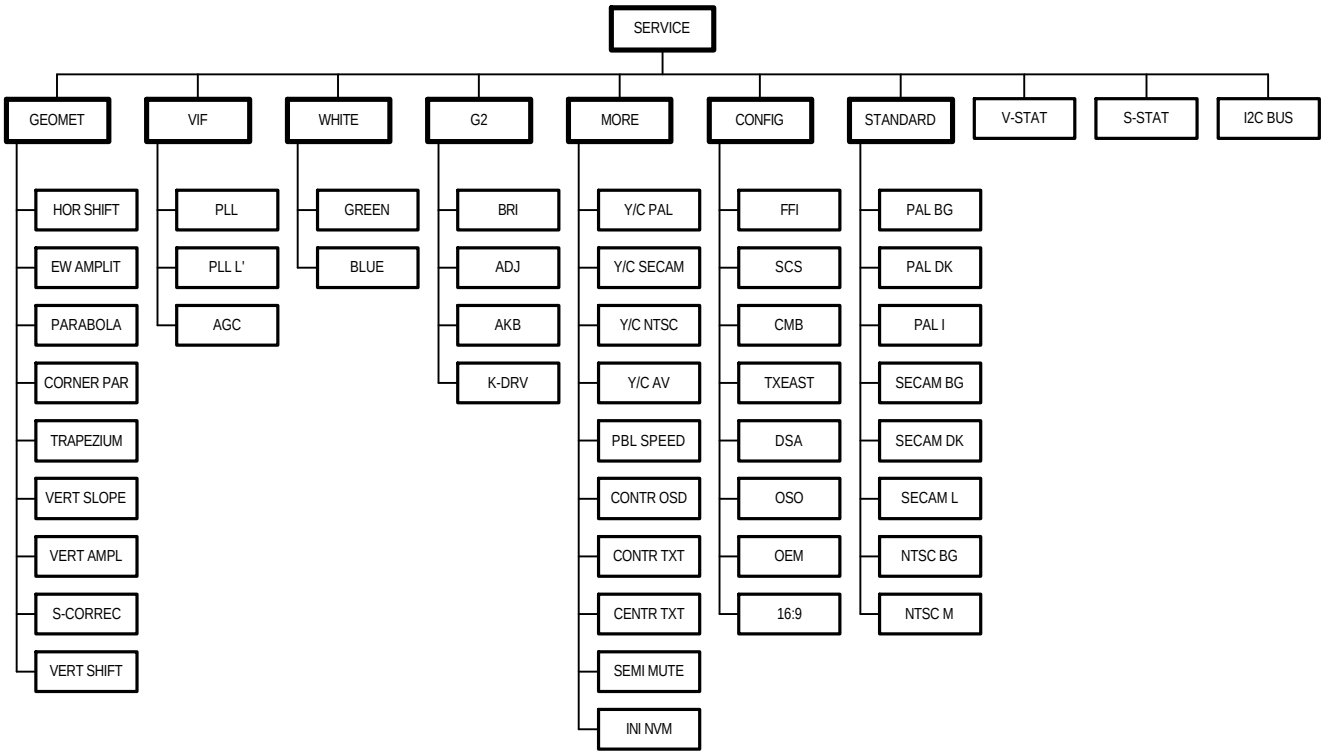
IC300 is the stereo audio amplifier for loudspeakers, it has a variable gain through the resistive dividers R303/R304 and R305/R306 (for channels L and R respectively). The power driven is approximately 8W rms. at 10% of distortion (each channel). The input pins (1 and 5) are connected to the audio processor (IC1300) or to the Active 3D Surround in models that have this feature. Pins 10 and 8 are the loudspeakers power outputs (channels L and R respectively). The microprocessor can mute the audio by setting high the MUTE signal. This pin is used only at TV set switch-on and off and in case of bad aerial reception. In all other situations the mute function is performed by the IC1300.

A fixed gain stereo amplifier is used for headphones (IC350). The input pins (7 and 6 for channels L and R) come from the audio processor headphones outputs. The headphones connector outputs are the pins 1 and 3.

The microprocessor detects the headphones presence via the HP_SW signal. The MUTE signal also affects the headphones audio.
The FM or NICAM-modulated sound IF signal, which inputs the audio processor, is produced by the sound IF circuit, IC1350. This IC takes the signal from the tuner and converts it to the intercarrier frequency. The internal VCO frequency is adjusted by means of L1351.

15. Service menu

The service menu is accessed by holding down the front key “VOL-“ and simultaneously pressing the teletext green key from the remote control. The service menu is a two level structure as shown in the diagram below.
The active keys (local or remote) in service mode are: VOL-, VOL+, P-, P+, MENU and the digits. The navigation through this menu works the same than in the user menu.
* The P+ and P- keys allow to navigate through the options in the active menu.
* The VOL+ key opens the second level menu if available. If there is a highlighted adjustment, the VOL- and VOL+ keys allow to change it.
* The MENU key goes back one level menu. If the active menu is the main one, it exits the service mode.
* The digit keys allow direct entry for adjustments.
* The SERVICE mode is exited by pressing any other key.



Adjustment	Meaning	Range	Initial value	Suggested value
HOR SHIFT	Horizontal phase	0 to 63	37	-
EW AMPLIT	Horizontal width	0 to 63	57	- Irrelevant in 90º deflection models
PARABOLA	E/W correction	0 to 63	38	- Irrelevant in 90º deflection models
CORNER PAR	E/W corner correction	0 to 63	30	- Irrelevant in 90º deflection models
TRAPEZIUM	Trapezium correction	0 to 63	21	- Irrelevant in 90º deflection models
VERT SLOPE	Ramp generator amplitude	0 to 63	36	-
VERT AMPL	Vertical amplitude	0 to 63	40	-
S-CORREC	Vertical S-correction	0 to 63	18	-
VERT SHIFT	Vertical centre	0 to 63	36	-
PLL	PLL of video IF	0 to 127	80	80 (imperative)
PLL L'	PLL of video IF in L' system	0 to 127	80	80 (imperative)
AGC	Automatic gain control	0 to 63	16	-
GREEN	White point, green gain	0 to 63	40	-
BLUE	White point, blue gain	0 to 63	36	-
BRI	G2 adjust brightness level	0 to 63	32	0 if cut-off = 160V 5 if cut-off = 150V 32 if cut-off = 130V
ADJ	Service Line Adjust	-	-	-
AKB	Enable/Disable AKB servo	ON/OFF	ON	ON
K-DRV	RGB Drive	0 to 7	5	5 in Ph110º 4 in 90º
Y/C PAL	PAL Phase luma-croma	0 to 15	03	03 in models PAL B/G 110º Irrelevant in 90º models
Y/C SECAM	SECAM Phase luma-croma	0 to 15	00	00 Irrelevant in 90º models
Y/C NTSC	NTSC Phase luma-croma	0 to 15	03	03 Irrelevant in 90º models
Y/C AV	AV inputs Phase luma-croma	0 to 15	10	10 Irrelevant in 90º models
PBL SPEED	Contrast reduction speed when PBL acts	0 to 63	9	9 in 100º models 18 in 90º models
CONTR OSD	OSD Contrast	0 to 63	25	25
CONTR TXT	TXT Contrast	0 to 63	18	18
CENTR TXT	OSD and TXT Centre	0 to 3	1	0
SEMI MUTE	Attenuation (dB) by pushing Mute once	0 to 63	15	15
INI NVM	Non volatile memory initialisation	-	-	-
FFI	PLL constant time of IF	ON/OFF	OFF	OFF
SCS	SCART connectors interchange	ON/OFF	OFF	Equals the OSD with the back cover label
CMB	Enable/Disable the Comb Filter	ON/OFF	OFF	ON in models with Comb-Filter OFF in models without Comb-Filter
TXEAST	Eastern characters set	ON/OFF	OFF	OFF
DSA	Skin tone correction angle	ON/OFF	OFF	OFF
OSO	HV discharge mode	ON/OFF	OFF	ON
OEM	TV set trade-mark	ON/OFF	OFF	OFF in SANYO models ON in SONITRON models
16:9	16:9 picture configuration	ON/OFF	OFF	OFF
PAL B/G	PAL B/G Configuration	ON/OFF	ON	ON
PAL D/K	PAL D/K Configuration	ON/OFF	ON	OFF
PAL I	PAL I Configuration	ON/OFF	OFF	OFF
SECAM B/G	SECAM B/G Configuration	ON/OFF	OFF	OFF in PAL models ON in SECAM models
SECAM D/K	SECAM D/K Configuration	ON/OFF	OFF	OFF
SECAM L	SECAM L Configuration	ON/OFF	OFF	OFF
NTSC BG	NTSC 4.43MHz Configuration	ON/OFF	ON	ON
NTSC M	NTSC 3,58MHz Configuration	ON/OFF	OFF	OFF (imperative)
V-STAT	Video processor status	-	-	-
S-STAT	Sound processor status	-	-	-
I2C BUS	I^2C Bus stop	-	-	-

16. Adjustment and repair procedures

ADJUSTMENT	SIGNAL	CONDITIONS	TEST POINTS	ADJUSTMENT POINT	ADJUSTMENT PROCEDURE	INSTRUMENTS
Power supply	Philips pattern	Picture: Normalised Sound: Minimum volume	B1 Cathode D850	VR800	Adjust to obtain: 150V ± 0.5V in CRTs Philips A59/A66EAK071X11 if C651 = 12 nF 148V ± 0.5V in CRTs Philips A59/A66EAK071X11 if C651 = 11 nF 148V ± 0.5V in CRTs Videocolor A59/A66EHJ43X38 150V ± 0.5V in CRTs Panasonic A59/A66ECF50X05 118V ± 0.5V in CRTs Philips A51EAL155X10/X11	Voltmeter DC Resolution >0,1V
AGC.	UHF Band - mid channel (e.g.CH25)	Aerial signal level: 60dBuV (1mVrms)	Pin 1 of TU250 (AGC)	SERVICE/VIF/AGC	Adjust to obtain 3,3V ±0,2V	Voltmeter DC Resolution >0,1V
Sound IF	Any picture		Pin 5 of IC1350	L1351	Adjust to obtain 2,3V ±0,15V	Voltmeter DC Resolution >0,1V
Vertical slope	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/GEOMETRY/VERT SLOPE	Adjust to achieve that the centre line of the Philips pattern matches the beginning of the service blanking	Visual adjustment
Vertical centre	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/GEOMETRY/VERT SHIFT	Adjust to centre the picture in vertical direction	Visual adjustment
Vertical size	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/ GEOMETRY/VERT AMPLIT	Adjust just to get the checked board hidden	Visual adjustment
Horizontal centre	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/ GEOMETRY/HOR SHIFT	Adjust to centre the picture in horizontal direction	Visual adjustment
Width (90º)	Philips pattern	Picture: Normalised	CRT Screen	L653	Adjust just to get the checked board hidden	Visual adjustment
Width (110º)	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/ GEOMETRY/EW AMPLIT	Adjust just to get the checked board hidden	Visual adjustment
Pin Cushion (110º)	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/ GEOMETRY/PARABOLA	Adjust to correct the pin cushion distortion in the way that vertical lateral lines become straight	Visual adjustment
Corner Pin Cushion (110º)	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/ GEOMETRY/CORNER PAR	Adjust to correct the pin cushion distortion in the corner in the way that vertical lateral lines become straight	Visual adjustment
Trapezium (110º)	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/ GEOMETRY/TRAPEZIUM	Adjust to obtain the lateral vertical lines parallel	Visual adjustment
G2	Philips pattern	Before SERVICE/G2/BRI must be: 32 en CRTs Philips A59/A66EAK071X11 0 en CRTs Philips A51EAL155X10/X11	CRT Screen	SERVICE/G2/ADJ SCREEN potentiometer	Adjust just to see the service line	Visual adjustment
White point	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/WHITE/GREEN SERVICE/WHITE/RED	Adjust to obtain a white tone acceptable	Visual adjustment
Focus	Philips pattern	Picture: Normalised	CRT Screen	FOCUS potentiometer	Adjust to obtain the best possible focusing in the centre of screen	Visual adjustment
TXT centre	Philips pattern	Picture: Normalised	CRT Screen	SERVICE/MORE/CENTR TXT	Adjust to centre the OSD in the screen	Visual adjustment

Common condition to all adjustments (except AGC): The aerial signal level must be acceptable (the picture doesn't present snow degradation)

16.*1 Notes about the adjustment:*

Normalised: Factory picture control normal has the following OSD positions:

- **Brightness:** 32 (Push key "+" 32 times starting at minimum position)
- **Contrast:** 58
- **Colour:** 30

16.*2 Switch-on sequence.*

In case of malfunction it is very important to know the switch-on procedure:

1. When the reset is at low level the microprocessor begins to work.
2. It recalls from NVM the last state before the switch-off.
3. If it is STAND BY, it remains in STAND BY. If it is ON, it continues the switch-on procedure.
4. It waits until a falling edge in the 16/9&BSYNC signal occurs.
5. The port B_HIGH is set (B_HIGH oscillating).
6. It waits until a rising edge in the 16/9&BSYNC signal occurs.
7. It reads the CTL1 signal. If this signal doesn't rise before 160mS the process is stopped indicating ERROR_4.
8. The Video processor is started via I2C bus. If there isn't any answer the process is stopped indicating ERROR_1.
9. There is a 1 second delay.
10. The deflections start. If there are failures the process is stopped indicating ERROR_2 or ERROR_3.
11. It waits until the cathode heater is warm by inspection of the video processor register bit AKB.
12. The picture and the sound are switched on and the procedure is finished.

16.*3 Protect modes and failure indication*

The microprocessor checks periodically the different parts of the circuit and if it detects any fault in a safety defined part then it puts the TV set in PROTECTED mode. The found error code is indicated by the red LED. The red indicator lamp flashes every 0,3 seconds and stops during 0,7 seconds. The number of flashes depends on the error code (see table below).

Error indication	Meaning
ERROR_1	The Video Processor does not answer
ERROR_2	Vertical Deflection Fault
ERROR_3	Horizontal Deflection Fault
ERROR_4	Power Supply Short-circuit.
ERROR_5	The Sound Processor does not answer
ERROR_6	The non volatile memory does not answer

The 1, 2, 5 and 6 error codes are read via the I^2C Bus.
The 3 and 4 error codes are read through the CTL1, CTL2 and -PD&FAIL signals.
In all cases except ERROR_5 the power supply is set in SMPS_B_LOW state.

16.*4 Protect mode inhibition*

In order to facilitate the TV set repair it is possible to disable the protect mode. By pushing the M key (PL100) in a fault detection situation, the microprocessor resumes normal execution flow except in ERROR_4 state (Power Supply Short-circuit). In this case the microprocessor keeps the power supply in SMPS_B_LOW state (the M key does not act).

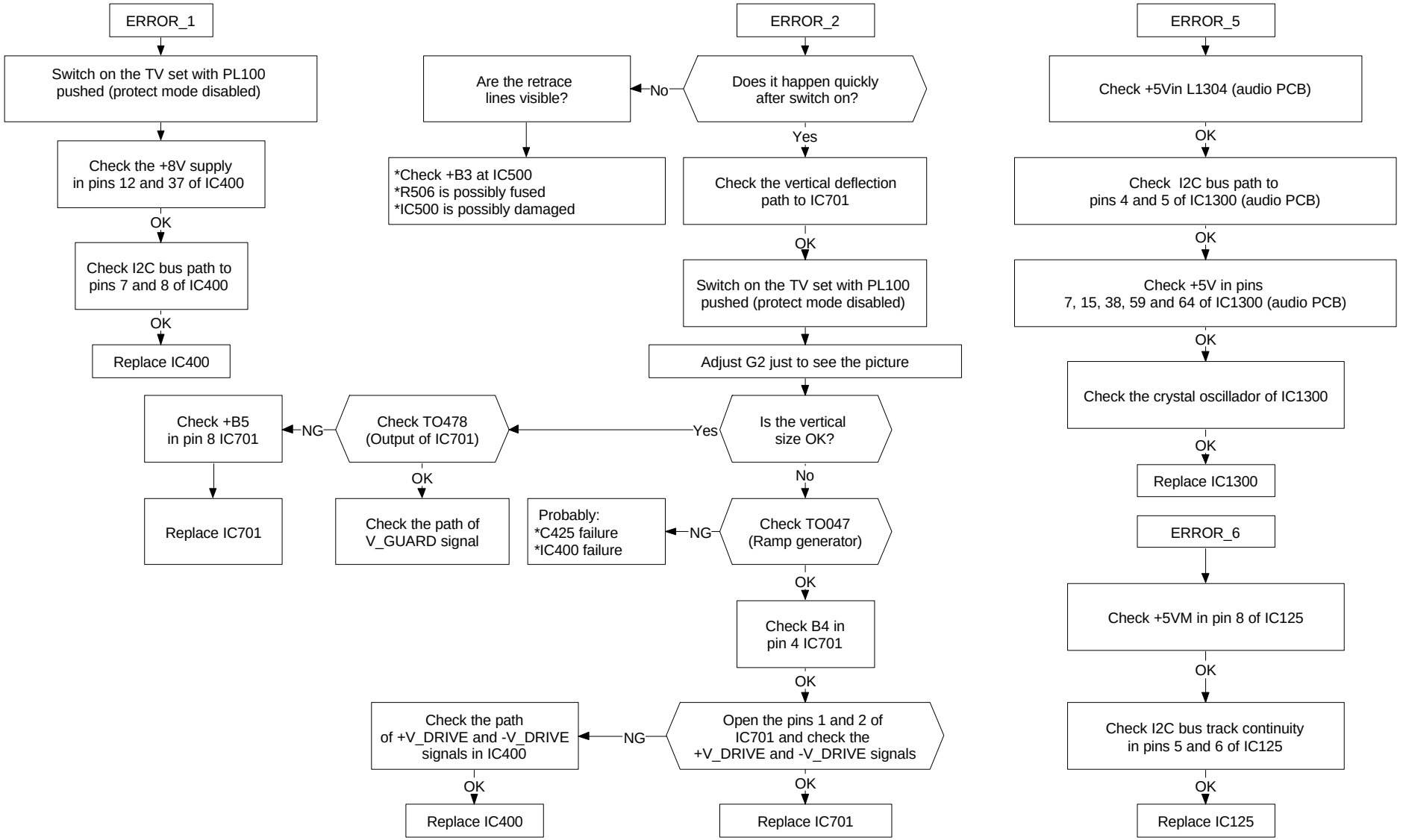
16.*5 Power supply repair procedure*

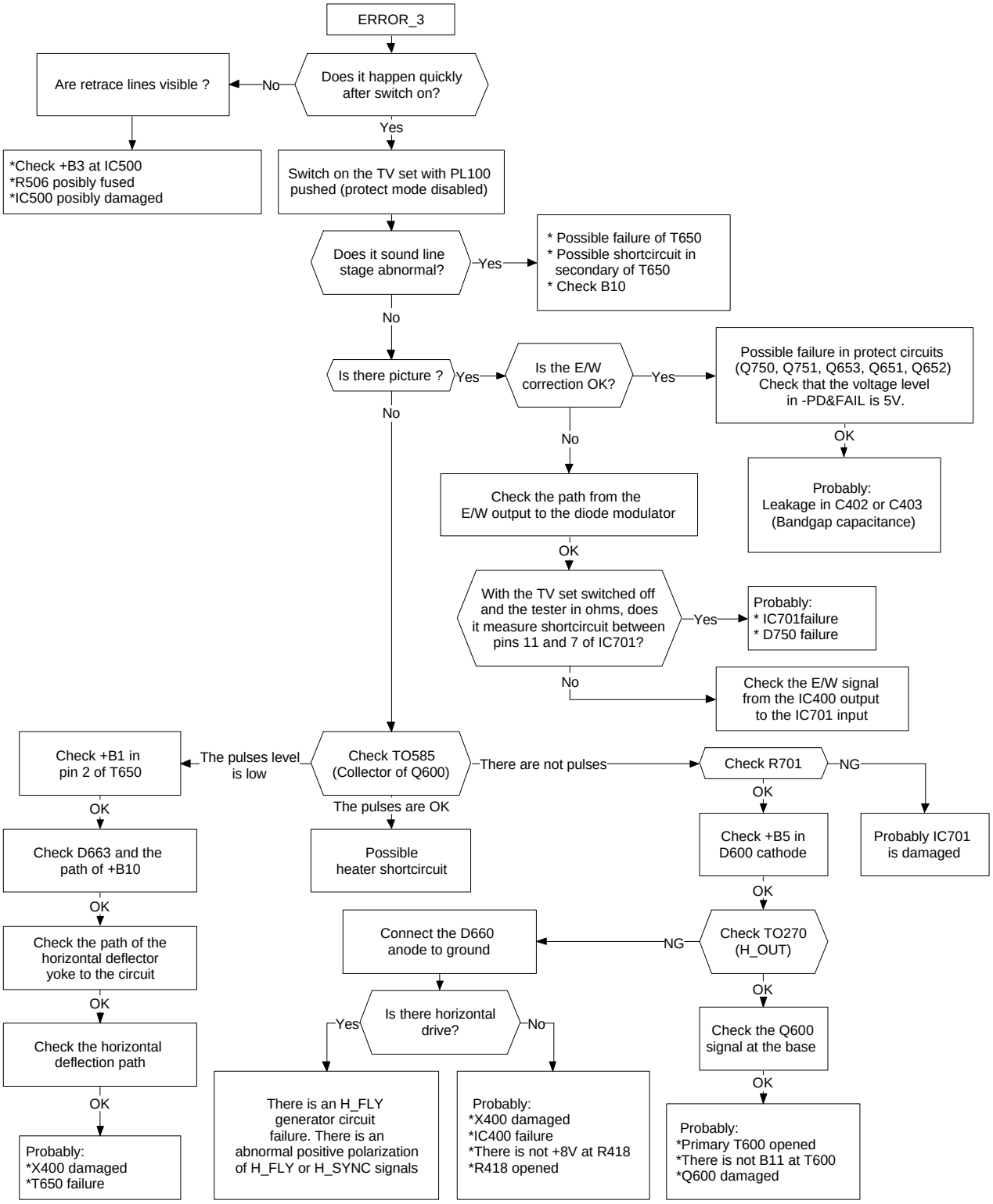
- When it is necessary to replace the IC800, it is strongly recommended to replace also the current sensor resistors R804 and R805 (they may be also damaged or altered).
- Keep in mind that when the power supply is forced to SMPS_B_HIGH state and without current consumption at the main output (deflection stopped), B6 is the stabilised output. The minimum voltage circuit is working and B6 can go down from the nominal 10 volts to 7,5 volts approximately. Also, in this situation B1 goes up until 160 - 180 volts in TV sets with 110º CRT.

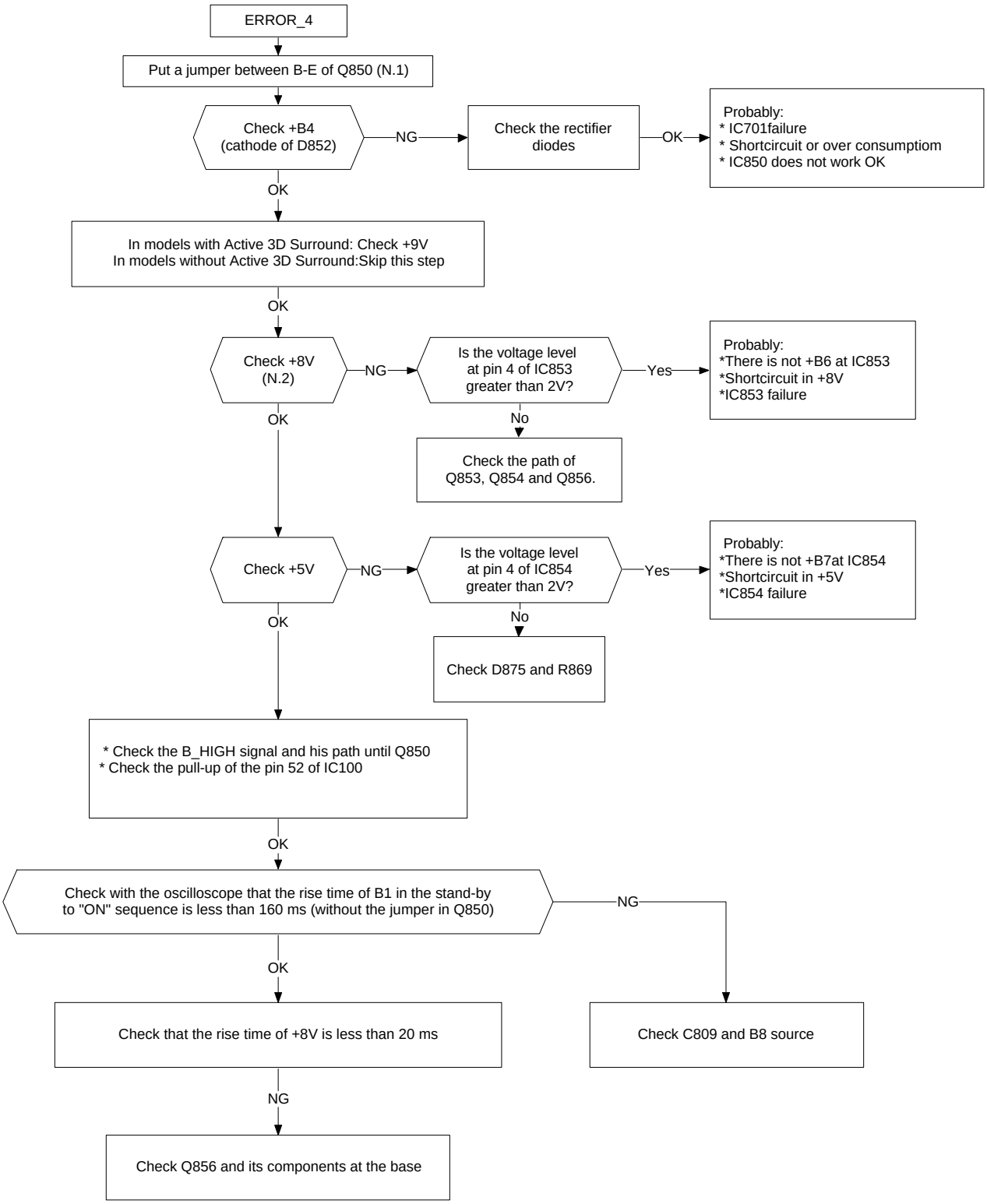
16.*6 Non-volatile memory (NVM) replacement, IC125*

When the TV set starts up, the microprocessor checks the non volatile memory in order to know if it has been initialised. Even if it detects no initialisation it will continue the start up procedure with a minimum default adjustment values stored in ROM. Then, in case of NVM replacement, it is necessary to initialise the non volatile memory from the SERVICE menu (it will load a complete set of default values) and afterwards adjust all the controls to its correct value.

17. Failure location flow-charts

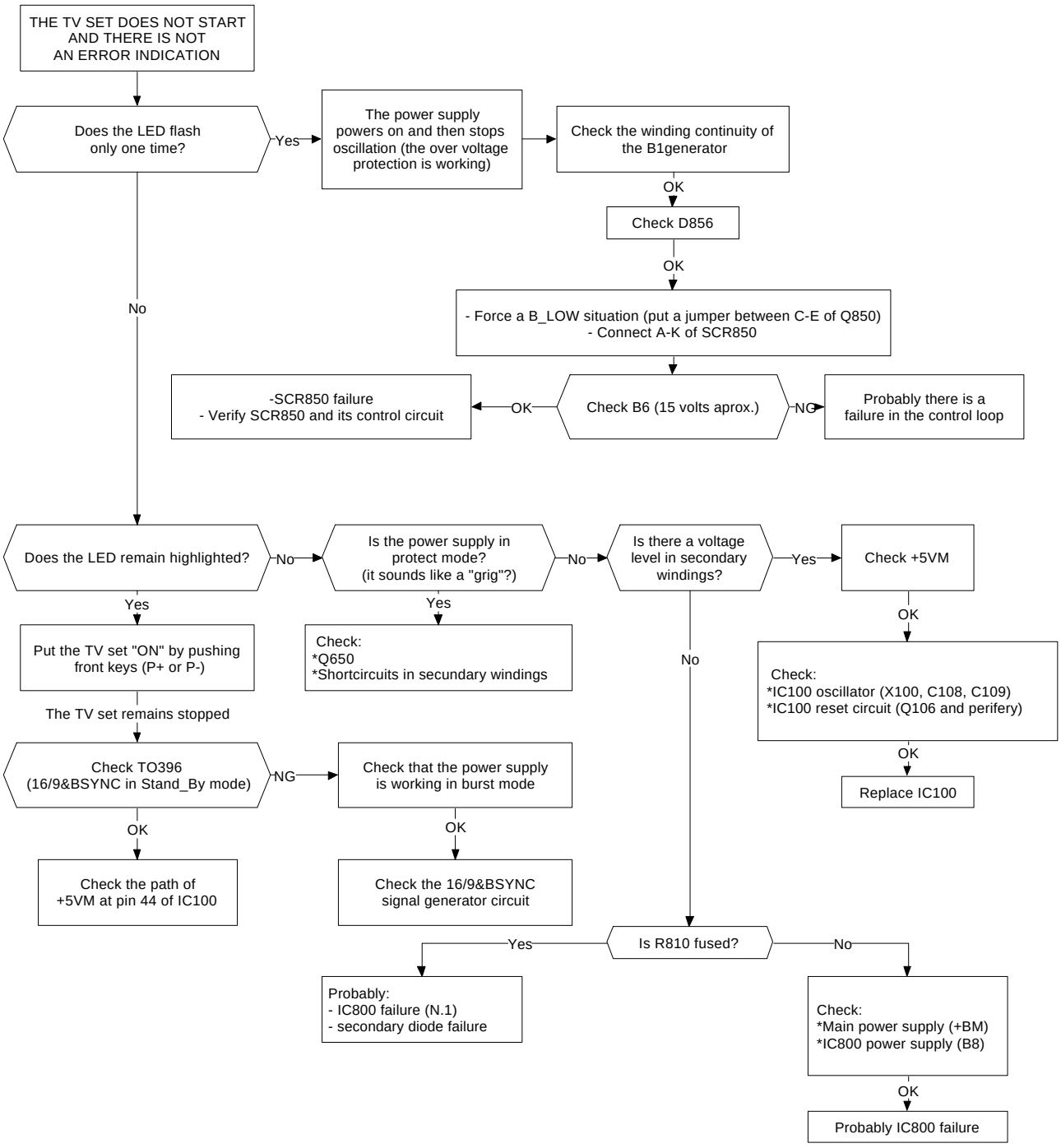

ERROR_1
Switch on the TV set with PL100 pushed (protect mode disabled)
Check the +8V supply in pins 12 and 37 of IC400
OK
Check I2C bus path to pins 7 and 8 of IC400
OK
Replace IC400
ERROR_2
Does it happen quickly after switch on?
No
Are the retrace lines visible?
*Check +B3 at IC500
*R506 is possibly fused
*IC500 is possibly damaged
Yes
Check the vertical deflection path to IC701
OK
Switch on the TV set with PL100 pushed (protect mode disabled)
Adjust G2 just to see the picture
Is the vertical size OK?
Yes
Check TO478 (Output of IC701)
NG
Check +B5 in pin 8 IC701
Replace IC701
OK
Check the path of V_GUARD signal
No
Check TO047 (Ramp generator)
NG
Probably:
*C425 failure
*IC400 failure
OK
Check B4 in pin 4 IC701
OK
Open the pins 1 and 2 of IC701 and check the +V_DRIVE and -V_DRIVE signals
NG
Check the path of +V_DRIVE and -V_DRIVE signals in IC400
OK
Replace IC400
OK
Replace IC701
ERROR_5
Check +5Vin L1304 (audio PCB)
OK
Check I2C bus path to pins 4 and 5 of IC1300 (audio PCB)
OK
Check +5V in pins 7, 15, 38, 59 and 64 of IC1300 (audio PCB)
OK
Check the crystal oscillador of IC1300
OK
Replace IC1300
ERROR_6
Check +5VM in pin 8 of IC125
OK
Check I2C bus track continuity in pins 5 and 6 of IC125
OK
Replace IC125


ERROR_3
Does it happen quickly after switch on?
No
Are retrace lines visible ?
*Check +B3 at IC500
*R506 posibly fused
*IC500 posibly damaged
Yes
Switch on the TV set with PL100 pushed (protect mode disabled)
Does it sound line stage abnormal?
Yes
* Possible failure of T650
* Possible shortcircuit in secondary of T650
* Check B10
No
Is there picture ?
Yes
Is the E/W correction OK?
Yes
Possible failure in protect circuits (Q750, Q751, Q653, Q651, Q652) Check that the voltage level in -PD&FAIL is 5V.
OK
Probably: Leakage in C402 or C403 (Bandgap capacitance)
No
Check the path from the E/W output to the diode modulator
OK
With the TV set switched off and the tester in ohms, does it measure shortcircuit between pins 11 and 7 of IC701?
Yes
Probably:
* IC701failure
* D750 failure
No
Check the E/W signal from the IC400 output to the IC701 input
No
Check TO585 (Collector of Q600)
The pulses level is low
Check +B1 in pin 2 of T650
OK
Check D663 and the path of +B10
OK
Check the path of the horizontal deflector yoke to the circuit
OK
Check the horizontal deflection path
OK
Probably:
*X400 damaged
*T650 failure
The pulses are OK
Possible heater shortcircuit
There are not pulses
Check R701
NG
Probably IC701 is damaged
OK
Check +B5 in D600 cathode
OK
Check TO270 (H_OUT)
NG
Connect the D660 anode to ground
OK
Check the Q600 signal at the base
OK
Probably:
*Primary T600 opened
*There is not B11 at T600
*Q600 damaged
Is there horizontal drive?
Yes
There is an H_FLY generator circuit failure. There is an abnormal positive polarization of H_FLY or H_SYNC signals
No
Probably:
*X400 damaged
*IC400 failure
*There is not +8V at R418
*R418 opened


ERROR_4
Put a jumper between B-E of Q850 (N.1)
Check +B4 (cathode of D852)
NG
Check the rectifier diodes
OK
Probably:
* IC701failure
* Shortcircuit or over consumptiom
* IC850 does not work OK
OK
In models with Active 3D Surround: Check +9V
In models without Active 3D Surround:Skip this step
OK
Check +8V (N.2)
NG
Is the voltage level at pin 4 of IC853 greater than 2V?
Yes
Probably:
*There is not +B6 at IC853
*Shortcircuit in +8V
*IC853 failure
OK
No
Check the path of Q853, Q854 and Q856.
Check +5V
NG
Is the voltage level at pin 4 of IC854 greater than 2V?
Yes
Probably:
*There is not +B7at IC854
*Shortcircuit in +5V
*IC854 failure
OK
No
Check D875 and R869
* Check the B_HIGH signal and his path until Q850
* Check the pull-up of the pin 52 of IC100
OK
Check with the oscilloscope that the rise time of B1 in the stand-by to "ON" sequence is less than 160 ms (without the jumper in Q850)
NG
OK
Check that the rise time of +8V is less than 20 ms
Check C809 and B8 source
NG
Check Q856 and its components at the base

N.1: Once the power supply is repaired, remove the jumper. Without it, the deflection does not start

N.2: Consider in this situation that the +8V source could be at 7,5 volts


THE TV SET DOES NOT START AND THERE IS NOT AN ERROR INDICATION
Does the LED flash only one time?
Yes
The power supply powers on and then stops oscillation (the over voltage protection is working)
Check the winding continuity of the B1generator
OK
Check D856
OK
- Force a B_LOW situation (put a jumper between C-E of Q850)
- Connect A-K of SCR850
Check B6 (15 volts aprox.)
OK
-SCR850 failure
- Verify SCR850 and its control circuit
NG
Probably there is a failure in the control loop
No
Does the LED remain highlighted?
No
Is the power supply in protect mode? (it sounds like a "grig"?)
No
Is there a voltage level in secondary windings?
Yes
Check +5VM
OK
Check:
*IC100 oscillator (X100, C108, C109)
*IC100 reset circuit (Q106 and perifery)
OK
Replace IC100
Yes
Put the TV set "ON" by pushing front keys (P+ or P-)
The TV set remains stopped
Yes
Check:
*Q650
*Shortcircuits in secundary windings
No
Check TO396 (16/9&BSYNC in Stand_By mode)
NG
Check that the power supply is working in burst mode
OK
Check the 16/9&BSYNC signal generator circuit
OK
Check the path of +5VM at pin 44 of IC100
Is R810 fused?
Yes
Probably:
- IC800 failure (N.1)
- secondary diode failure
No
Check:
*Main power supply (+BM)
*IC800 power supply (B8)
OK
Probably IC800 failure

- N.1: If there is an IC800 failure, and R810 was openned, it is strongly recommended to replace also the resistors R804 and R805

18. Complete PCB codes for after sales service

	CE28FN1-E	CE25FN1-E	CE21FN1-E
CRT (PHILIPS)	A66EAK071X11	A59EAK071X11	A51EAL155X10 A51EAL155X11
General PCB + Socket CRT + Audio PCB	6110369201	6110369201	6110369102
Socket PCB	7040002409	7040002409	7040002508
General PCB	7110015000	7110015000	7110014904
Audio PCB	7140001301	7140001301	7140001301

19. CHASSIS ELECTRICAL PARTS LIST CE21FN1-E / CE25FN1-E / CE28FN1-E

Position		Part No.	Description
YG 1		0200826402	LED Holder
YG 4	✶	0080112501	COMP. Side IF Shield EB5-A
YG 5	✶	0080112600	Copper Side IF Shield EB5-A
YG 6		0200627305	AUDIO MODULE Holder

Assy PA (Audio)

IC300		0360512206	TDA 7263 M
YR300		0200224319	HEARSINK 'Z' 56,6X126,5
YR300A		0640705117	Eyelet 2,5-3
YR301		0970200804	Silicon Grease YG6260
YR302		0890005200	Screw M3X0,5X10
YR303		0990010316	HEXAGONAL NUT M3X0,5
YR304		0050709104	Washer
YR305		0050203207	SAFETY Washer M3

Assy PD (Deflection)

IC701	**25"/28"**	0360514608	TDA 8350Q N5
IC701	**21"**	0360514707	TDA 8351AQ N5
Q650		0360306708	S 2055 N
YR650		0200224608	Heatsink Deflection EB5-A
YR650A		0640705117	Eyelet 2,5-3
YR651		0970200804	Silicon Grease YG6260
YR652		0010106300	Spring CLIP 56379

Position	Part No.	Description

Assy PF(Power Supply)

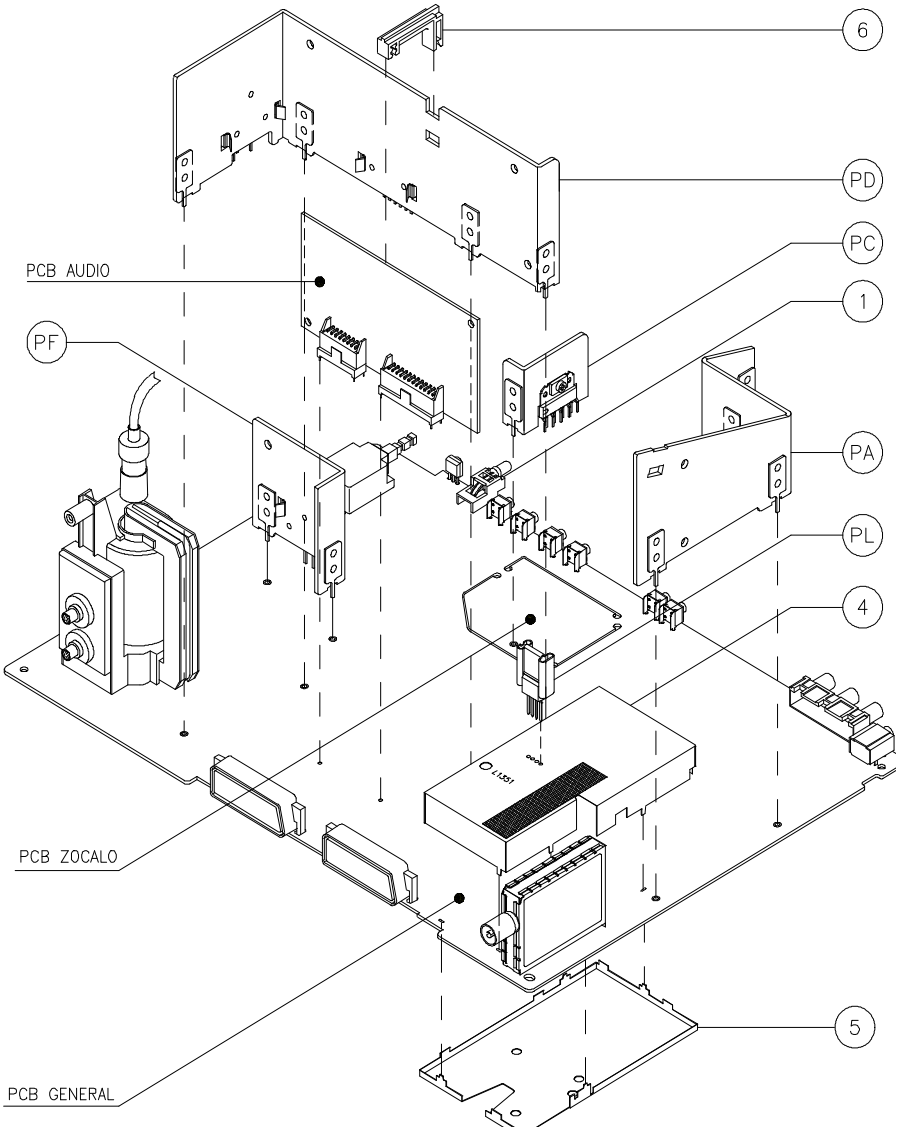
IC800	0360467609	STR-F6653
YR800	0200224707	Heatsink SOURCE EB5-A
YR800A	0640705117	Eyelet 2,5-3
YR801	0970200804	Silicon Grease YG6260
YR802	0010106300	Spring CLIP 56379

Assy PL

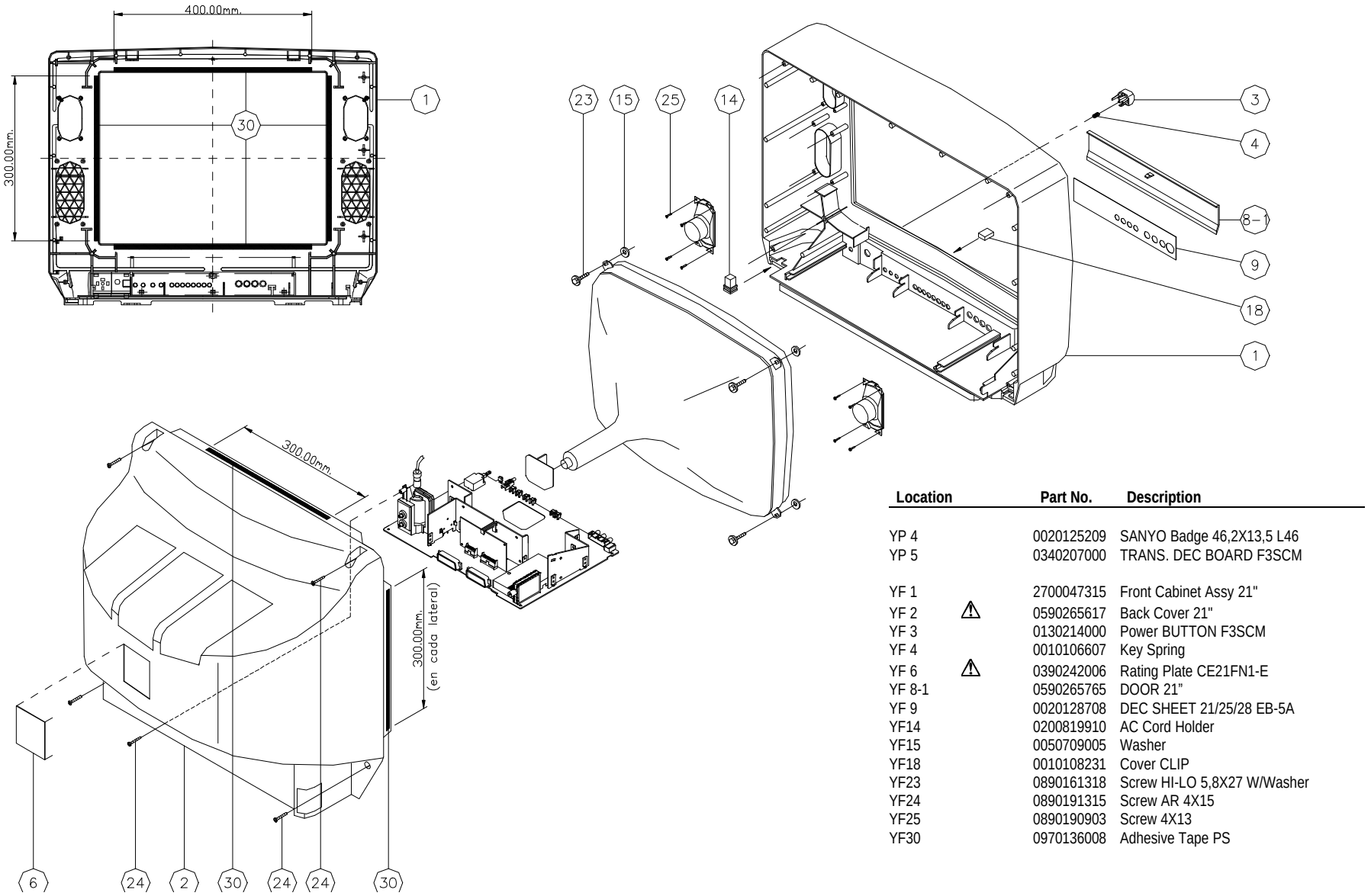
IC854	0360472807	KA78R05-STU
YR854	0200224905	Heatsink TO-220-F

Assy PC (Socket TRC)

IC500	0360514202	TDA 6107 Q N1
YR500	0200224806	Heatsink RGB EB5-A
YR500A	0640705117	Eyelet 2,5-3
YR501	0970200804	Silicon Grease YG6260
YR502	0050709104	Washer
YR503	0890121106	Screw M3X6 FE/ZN DIN 7985

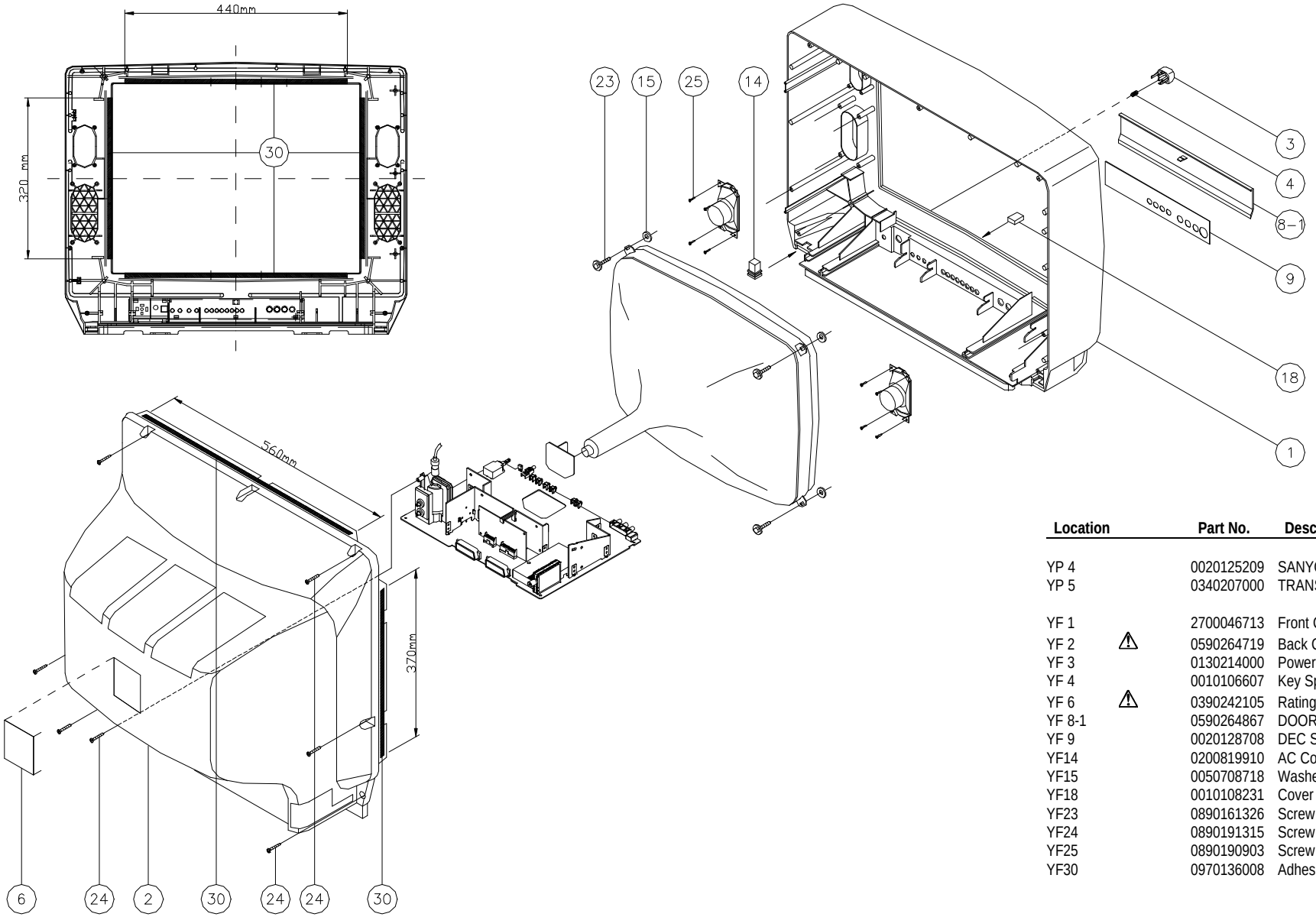


20. CE21FN1-E CABINET PARTS LIST



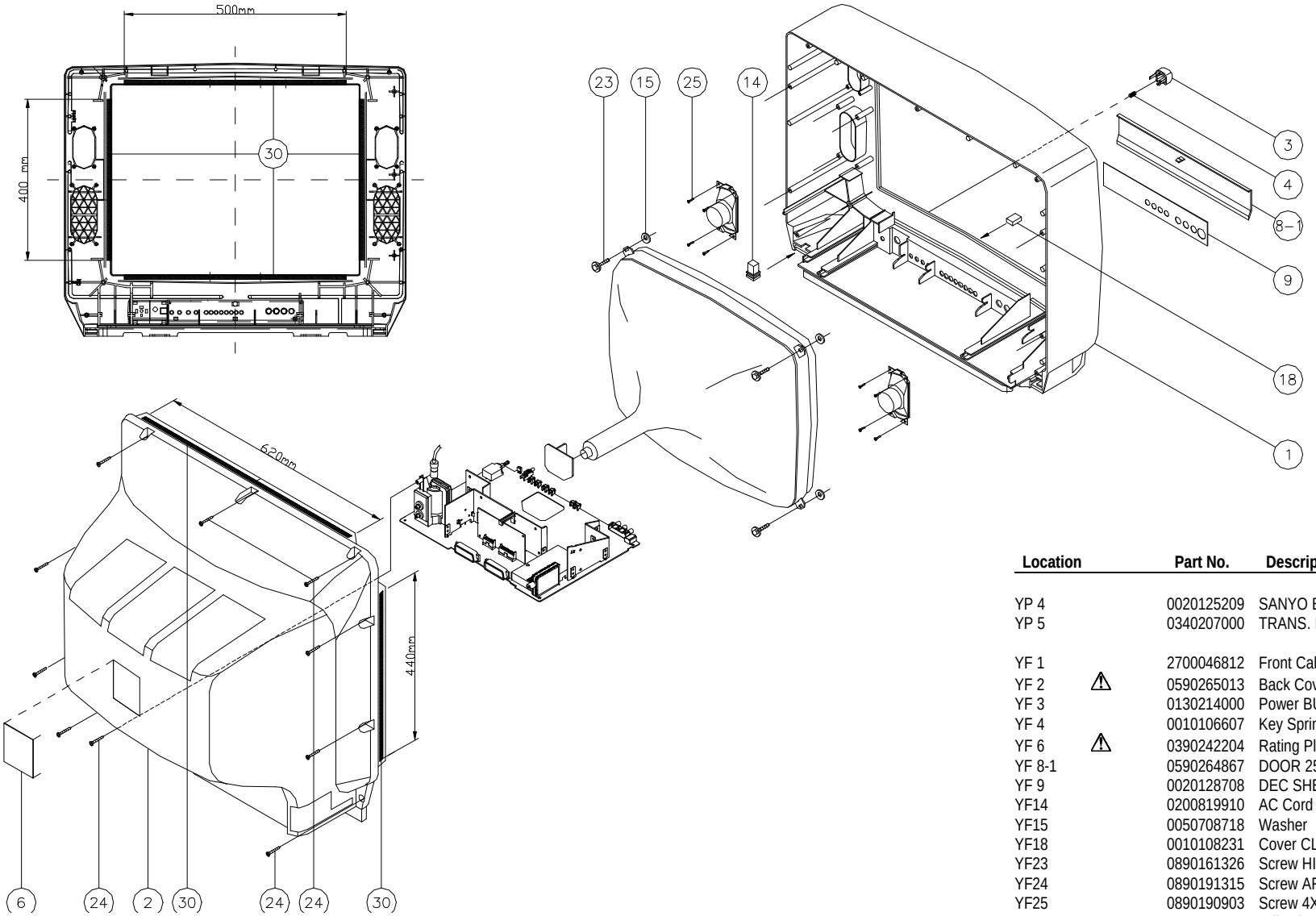
Location		Part No.	Description
YP 4		0020125209	SANYO Badge 46,2X13,5 L46
YP 5		0340207000	TRANS. DEC BOARD F3SCM
YF 1		2700047315	Front Cabinet Assy 21"
YF 2	⚠	0590265617	Back Cover 21"
YF 3		0130214000	Power BUTTON F3SCM
YF 4		0010106607	Key Spring
YF 6	⚠	0390242006	Rating Plate CE21FN1-E
YF 8-1		0590265765	DOOR 21"
YF 9		0020128708	DEC SHEET 21/25/28 EB-5A
YF14		0200819910	AC Cord Holder
YF15		0050709005	Washer
YF18		0010108231	Cover CLIP
YF23		0890161318	Screw HI-LO 5,8X27 W/Washer
YF24		0890191315	Screw AR 4X15
YF25		0890190903	Screw 4X13
YF30		0970136008	Adhesive Tape PS

21. CE25FN1-E CABINET PARTS LIST



Location		Part No.	Description
YP 4		0020125209	SANYO Badge 46,2X13,5 L46
YP 5		0340207000	TRANS. DEC BOARD F3SCM
YF 1		2700046713	Front Cabinet Assy 25" A F3PC
YF 2	⚠	0590264719	Back Cover 25" A-F3PAM
YF 3		0130214000	Power BUTTON F3SCM
YF 4		0010106607	Key Spring
YF 6	⚠	0390242105	Rating Plate CE25FN1-E
YF 8-1		0590264867	DOOR 25/28 F3SC EB-5A
YF 9		0020128708	DEC SHEET 21/25/28 EB-5A
YF14		0200819910	AC Cord Holder
YF15		0050708718	Washer
YF18		0010108231	Cover CLIP
YF23		0890161326	Screw HI-LO 5,8X27 W/Washer
YF24		0890191315	Screw AR 4X15
YF25		0890190903	Screw 4X13
YF30		0970136008	Adhesive Tape PS

22. CE28FN1-E CABINET PARTS LIST



Location		Part No.	Description
YP 4		0020125209	SANYO Badge 46,2X13,5 L46
YP 5		0340207000	TRANS. DEC BOARD F3SCM
YF 1		2700046812	Front Cabinet Assy 28"
YF 2	⚠	0590265013	Back Cover 25" A-F3PAM
YF 3		0130214000	Power BUTTON F3SCM
YF 4		0010106607	Key Spring
YF 6	⚠	0390242204	Rating Plate CE28FN1-E
YF 8-1		0590264867	DOOR 25/28 F3SC EB-5A
YF 9		0020128708	DEC SHEET 21/25/28 EB-5A
YF14		0200819910	AC Cord Holder
YF15		0050708718	Washer
YF18		0010108231	Cover CLIP
YF23		0890161326	Screw HI-LO 5,8X27 W/Washer
YF24		0890191315	Screw AR 4X15
YF25		0890190903	Screw 4X13
YF30		0970136008	Adhesive Tape PS

23. Parts List

PCB SOCKET TRC

Location		Part No.	Description
CONNECTORS			
CON FD		0330144205	Ribbon Wire Holder 4 P.
CON FH		0330144304	Ribbon Wire Holder 5 P.
CON.FD		0160220711	Polarised Band Grey 4P. 520+6+6
CON.FH		0160230819	Polarised Band Grey 5P. 450+6+6
CON.FK		0640202610	Earth Wire 270 mm.
CAPACITORS			
C500		0270341324	Polyester 100 nF. 10% 250V.
C501		0250322849	Electrolytic 10 µF. 250V.
C503		0240590901	Ceramic 2200pF +80-20% 2KV.
DIODES			
D500		0360007215	BAV21 DIODE
D501		0360007215	BAV21 DIODE
D502		0360007215	BAV21 DIODE
INTEGRATED CIRCUIT			
IC500		0360514202	TDA 6107 Q N1
COILS			
L503		0790701106	SMD 0 Ω 1/10W.
L504		0790701106	SMD 0 Ω 1/10W.
L505		0090304924	Choke R.F. 470 µH. 10%
PCB04	⚠	0750151029	Socket PCB EB5-A
RESISTORS			
R500		0790741409	Solid 1,5 KΩ 10% 1/2W.
R501		0790741409	Solid 1,5 KΩ 10% 1/2W.
R502		0790741409	Solid 1,5 KΩ 10% 1/2W.
R503		0790741409	Solid 1,5 KΩ 10% 1/2W.
R504		0790741409	Solid 1,5 KΩ 10% 1/2W.
R506	⚠**25"/28"**	0790539704	Fuse 22 Ω 5% 0,3W.
R506	⚠**21"**	0790535702	Fuse 10 Ω 5% 0,33W.
R507		0790227003	R.M.G. 100 Ω 5% 1/10W
R508		0790227003	R.M.G. 100 Ω 5% 1/10W
R509		0790227003	R.M.G. 100 Ω 5% 1/10W
R510		0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
R511		0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
R512		0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
ZOCALO	⚠	0330162009	CRT Socket DIAMETER 22,5 mm.

MAIN PCB

Location		Part No.	Description
CF200		0090412701	Ceramic TRAP Filter 5,5/6,5 MHz
CONNECTORS			
CN FB		0330193608	4P. Connector
CN FC		0330115106	2P. Socket X RTM 1/6/8
CN FD		0330144205	Ribbon Wire Holder 4 P.
CN FE		0330115106	2P. Socket X RTM 1/6/8
CN FF1		0330190000	2P. Connector
CN FF2		0330270109	2 P. Socket
CN FH		0330144304	Ribbon Wire Holder 5 P.
CN G2	**25"/28"**	0640706503	Blue G2 Wire with two Terminals
CAPACITORS			
C100		0230600504	Ceramic SMD 100 nF. 10% 25V.
C101		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C102		0230600504	Ceramic SMD 100 nF. 10% 25V.
C103		0250320769	Electrolytic 10 µF. 16V.
C104		0230600504	Ceramic SMD 100 nF. 10% 25V.
C105		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1050	**25"/28"**	0230600504	Ceramic SMD 100 nF. 10% 25V.
C1051	**25"/28"**	0250320769	Electrolytic 10 µF. 16V.
C1052	**25"/28"**	0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1053	**25"/28"**	0230600504	Ceramic SMD 100 nF. 10% 25V.
C1054	**25"/28"**	0230600504	Ceramic SMD 100 nF. 10% 25V.
C1055	**25"/28"**	0230600504	Ceramic SMD 100 nF. 10% 25V.
C1056	**25"/28"**	0250320769	Electrolytic 10 µF. 16V.
C1057	**25"/28"**	0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1058	**25"/28"**	0250461266	Electrolytic 100 µF. 16V.
C1059	**25"/28"**	0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C106		0270101231	Polyester 1000pF. 5% 63V.
C1060	**25"/28"**	0250320769	Electrolytic 10 µF. 16V.
C1061	**25"/28"**	0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1062	✷**25"/28"**	0230190308	Ceramic SMD 39 pF. 5% 50V.
C1063	✷**25"/28"**	0230190308	Ceramic SMD 39 pF. 5% 50V.
C107		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C108		0230160327	Ceramic SMD 22 pF. 1% 50V.
C109		0230160327	Ceramic SMD 22 pF. 1% 50V.
C110		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C111		0250320769	Electrolytic 10 µF. 16V.
C112		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C113		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C114		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C115	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C116	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C117		0230360406	Ceramic SMD 1000 pF. 10% 50V.
C118		0230360406	Ceramic SMD 1000 pF. 10% 50V.
C1351		0250320769	Electrolytic 10 µF. 16V.
C1352		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1353		0250280864	Electrolytic 4,7 µF. 25V.
C1354		0250280864	Electrolytic 4,7 µF. 25V.
C1355		0230680308	Ceramic SMD 470 nF. 10% 16V.
C1356		0230190704	Ceramic SMD. 8 pF. +/-0,5pF. 50V.
C1358		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1359		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C200		0250320769	Electrolytic 10 µF. 16V.
C201		0230190308	Ceramic SMD 39 pF. 5% 50V.
C202		0230360406	Ceramic SMD 1000 pF. 10% 50V.
C203		0230600504	Ceramic SMD 100 nF. 10% 25V.
C204		0230600504	Ceramic SMD 100 nF. 10% 25V.
C205		0230740003	Ceramic SMD 2,2 µF. 10V. +80-20%
C206	✷	0230190308	Ceramic SMD 39 pF. 5% 50V.
C207		0250320769	Electrolytic 10 µF. 16V.
C250		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C251		0250461266	Electrolytic 100 µF. 16V.
C252		0270341480	Polyester 100 nF. 10% 63V.
C256		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C257		0270341480	Polyester 100 nF. 10% 63V.
C258		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C259		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C260		0250360468	Electrolytic 22 µF. 16V.
C261		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C300		0250601069	Electrolytic 2200 µF. 35V. R-7,5
C301		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C303		0250410867	Electrolytic 47 µF. 16V.
C304	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C305	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C306	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C307	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C308	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C309		0250240462	Electrolytic 2,2 µF. 63V.
C310		0250240462	Electrolytic 2,2 µF. 63V.
C311		0250601663	Electrolytic 2200 µF. 16V.
C312		0250601663	Electrolytic 2200 µF. 16V.
C313		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C314		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C315	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C316	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C319		0250360468	Electrolytic 22 µF. 16V.
C320		0250360468	Electrolytic 22 µF. 16V.
C350	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C351	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C352		0250410867	Electrolytic 47 µF. 16V.
C353		0250410867	Electrolytic 47 µF. 16V.
C354		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C355		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C356		0250500667	Electrolytic 220 µF. 16V.
C357		0250461266	Electrolytic 100 µF. 16V.
C359		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C361		0250461266	Electrolytic 100 µF. 16V.

Location		Part No.	Description
C364	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C400		0250461266	Electrolytic 100 µF. 16V.
C401		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C402		0230740003	Ceramic SMD 2,2 µF. 10V. +80-20%
C403		0230520405	Ceramic SMD 22 nF. 10% 50V.
C405		0230360406	Ceramic SMD 1000 pF. 10% 50V.
C406		0230600504	Ceramic SMD 100 nF. 10% 25V.
C408		0230520405	Ceramic SMD 22 nF. 10% 50V.
C409		0230520405	Ceramic SMD 22 nF. 10% 50V.
C410		0230520405	Ceramic SMD 22 nF. 10% 50V.
C411		0230150229	Ceramic SMD 18 pF. 1% 50V.
C412		0230600504	Ceramic SMD 100 nF. 10% 25V.
C413		0230420119	Ceramic SMD 3300 pF.10% 63V.0805
C414		0230520405	Ceramic SMD 22 nF. 10% 50V.
C415		0250461266	Electrolytic 100 µF. 16V.
C416		0230600504	Ceramic SMD 100 nF. 10% 25V.
C417		0230400103	Ceramic SMD 2200 pF. 10% 50V.
C418		0230360406	Ceramic SMD 1000 pF. 10% 50V.
C420		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C421		0230440125	Ceramic SMD 4700 pF.10% 50V.0805
C423	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C424	✷	0230600504	Ceramic SMD 100 nF. 10% 25V.
C425		0270342603	Policarbonate 100 nF. 5% 63V.
C426		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C427		0230600504	Ceramic SMD 100 nF. 10% 25V.
C428	✷	0230240327	Ceramic SMD 100 pF. 5% 50V.
C432	**25"/28"**	0230390205	Ceramic SMD 1800 pF. 10% 50V.
C432	**21"**	0230320301	Ceramic SMD 470 pF. 10% 50V.
C433		0230240327	Ceramic SMD 100 pF. 5% 50V.
C435		0230440125	Ceramic SMD 4700 pF.10% 50V.
C437	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C439	✷	0230480600	Ceramic SMD 10 nF. +80-20% 50V
C440		0230180226	Ceramic SMD 33 pF. 1% 50V.
C600	**25"/28"**	0250248267	Electrolytic 2,2 µF. 160V.
C600	**21"**	0250220464	Electrolytic 1 µF. 100V.
C601		0270140122	Polyester 2200 pF. 10% 400V.
C603		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C604		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C650	**25"/28"**	0260125273	Polypropylene 27 nF. 5% 1KV.
C651	**25"/28"**	0260011374	Polypropylene 12 nF. 5% 1,6KV
C651	**21"**	0260217179	Polypropylene 9100 pF. 5% 1,6KV
C651A		0640850210	Eyelet 1,6-3
C652	**25"/28"**	0260420278	Polypropylene 470nF. 5% 400V.
C652A	**25"/28"**	0640850210	Eyelet 1,6-3
C653	**25"/28"**	0260433073	Polypropylene 820 nF. 5% 250V.
C653	**21"**	0260420278	Polypropilene 470 nF. 5% 400V.
C653A		0640850210	Eyelet 1,6-3
C654		0260120472	Polypropylene 1000pF. 5% 2KV
C655	**25"/28"**	0270261720	Polyester 22 nF. 10% 100V.
C655	**21"**	0270250582	Polyester 18 nF. 10% 250V.
C656		0250248267	Electrolytic 2,2 µF. 160V.
C657		0240132035	Ceramic 470 pF. 10% 1KV.
C659	**25"/28"**	0250132743	Electrolytic 100 µF. 200V.
C660		0230340408	Ceramic SMD 680 pF. 10% 630V.
C661		0250283868	Electrolytic 4,7 µF. 250V.
C663		0230600504	Ceramic SMD 100 nF. 10% 25V.
C664		0230200305	Ceramic SMD 47 pF. 5% 50V.
C666	**21"**	0270450216	Polyester 820 nF. 5% 250V.
C667		0270100522	Polyester 1000 pF. 10% 400V.
C668		0250116761	Electrolytic 4,7 µF. 160V.
C669		0230340408	Ceramic SMD 680 pF. 10% 630V.
C670		0270341324	Polyester 100 nF. 10% 250V.
C671		0270220726	Polyester 10 nF. 10% 250V.
C672	**25"/28"**	0230360505	Ceramic SMD 1000 pF 5% 100V.
C673		0270220726	Polyester 10 nF. 10% 250V.
C674		0230520405	Ceramic SMD 22 nF. 10% 50V.
C675		0230600504	Ceramic SMD 100 nF. 10% 25V.
C676		0270381080	Polyester 220 nF. 10% 63V.
C677	**21"**	0230260705	Ceramic SMD 150 pF. 10% 630V.
C679		0250210861	Electrolytic 0,47 µF. 50V.
C680		0230680308	Ceramic SMD 470 nF. 10% 16V.
C700		0250321064	Electrolytic 10 µF. 63V.
C701		0250412962	Electrolytic 47 µF. 50V.
C702		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C703	**25"/28"**	0270381080	Polyester 220 nF. 10% 63V.
C703	**21"**	0270341480	Polyester 100 nF. 10% 63V.
C705	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C706	✷	0230360406	Ceramic SMD 1000 pF. 10% 50V.
C710		0270220726	Polyester 10 nF. 10% 250V.
C712		0270220726	Polyester 10 nF. 10% 250V.
C750	**25"/28"**	0270320732	Polyester 68 nF. 10% 63V.
C751	✷**25"/28"**	0230320301	Ceramic SMD 470 pF. 10% 50V.
C752	✷**25"/28"**	0230320301	Ceramic SMD 470 pF. 10% 50V.
C753	**25"/28"**	0250116761	Electrolytic 4,7 µF. 160V.
C800	⚠✷	0270342702	Polyester 100 nF. 20% 275V.AC
C801	⚠✷	0270342702	Polyester 100 nF. 20% 275V.AC
C802		0240134767	Ceramic 1000 pF. +-20% 1KV.
C803		0240134767	Ceramic 1000 pF. +-20% 1KV.
C804		0240134767	Ceramic 1000 pF. +-20% 1KV.
C805		0240134767	Ceramic 1000 pF. +-20% 1KV.
C807		0230560302	Ceramic SMD 47 nF. 10% 50V.
C809		0250362308	Electrolytic 22 µF. 20% 50V.
C810		0250503604	Electrolytic. 220 µF. 385V.
C810A		0640705117	Eyelet 2,5-3
C811		0230320525	Ceramic SMD 470 pF. 5% 50V.
C812	✷⚠**25"/28"**	0240136135	Ceramic 1000 pF. 20% 4KV
C812	✷⚠**21"**	0240590133	Ceramic 2200 pF. 20% 4KV
C814		0230340309	Ceramic SMD 680 pF.10% 50V.
C815		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C816	✷⚠**25"/28"**	0240136135	Ceramic 1000 pF. 20% 4KV
C817		0230300303	Ceramic SMD 330 pF. 10% 630V.
C818	✷	0230300303	Ceramic SMD 330 pF. 10% 630V.
C819		0230300402	Ceramic SMD 330 pF. 10% 1KV.1206
C830		0250362308	Electrolytic 22 µF. 20% 50V.
C833		0230720302	Ceramic SMD 1µF. +80-20% 25V.
C850	**25"/28"**	0240460501	Ceramic 180 pF. 5% 1KV.
C850	**21"**	0240470708	Ceramic 220 pF. 5% 1KV.
C852		0230600504	Ceramic SMD 100 nF. 10% 25V.
C853		0230600504	Ceramic SMD 100 nF. 10% 25V.
C854		0250220464	Electrolytic 1 µF. 100V.
C855		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C856	**25"/28"**	0250132743	Electrolytic 100 µF. 200V.
C856	**21"**	0250465044	Electrolytic 100 µF. 160V.
C857		0250572260	Electrolytic 1000 µF. 35V.
C858		0250572369	Electrolytic 1000 µF. 25V.
C859		0250463767	Electrolytic 100 µF. 50V.
C860		0250150240	Electrolytic 3300 µF. 16V.
C861		0250141462	Electrolytic 470 µF. 16V.
C862		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C863		0230360406	Ceramic SMD 1000 pF. 10% 50V.
C865		0240391102	Ceramic 47 pF. 5% 500V. SL
C866		0250320769	Electrolytic 10 µF. 16V.
C867		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C868		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C869		0250320769	Electrolytic 10 µF. 16V.
C870		0250320769	Electrolytic 10 µF. 16V.
C872		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C873		0250141462	Electrolytic 470 µF. 16V.
C874		0250461266	Electrolytic 100 µF. 16V.
C875		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C876		0230600504	Ceramic SMD 100 nF. 10% 25V.
C877		0250141462	Electrolytic 470 µF. 16V.
C900	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C901	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C902	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C903	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C904	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C905	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C906	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C907		0250320769	Electrolytic 10 µF. 16V.
C908		0230320301	Ceramic SMD 470 pF. 10% 50V.
C909	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C910		0230320301	Ceramic SMD 470 pF. 10% 50V.
C911	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C913	✷	0230240327	Ceramic SMD 100 pF. 5% 50V.
C914	✷	0230240327	Ceramic SMD 100 pF. 5% 50V.
C917	✷	0230240327	Ceramic SMD 100 pF. 5% 50V.
C918		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C920		0250320769	Electrolytic 10 µF. 16V.
C921		0250320769	Electrolytic 10 µF. 16V.
C922		0250320769	Electrolytic 10 µF. 16V.
C923		0250320769	Electrolytic 10 µF. 16V.
C924	✷	0790701106	SMD 0 Ω 1/10W.

Location		Part No.	Description
C925	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C926		0250410867	Electrolytic 47 µF. 16V.
C927		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C928		0250410867	Electrolytic 47 µF. 16V.
C929		0250220464	Electrolytic 1 µF. 100V.
C930		0250410867	Electrolytic 47 µF. 16V.
C931		0250410867	Electrolytic 47 µF. 16V.
C932		0250220464	Electrolytic 1 µF. 100V.
C933		0250220464	Electrolytic 1 µF. 100V.
C934		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C935		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C936		0250410867	Electrolytic 47 µF. 16V.
C937		0250320769	Electrolytic 10 µF. 16V.
C938		0250410867	Electrolytic 47 µF. 16V.
C939	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C940	✷	0230240327	Ceramic SMD 100 pF. 5% 50V.
DIODES			
D100		0360126205	Red/Green 3 mm.
D101		0360602403	Zener SMD BZM55C6V2
D103		0360601504	SMD MCL4148
D104		0360601504	SMD MCL4148
D105		0360601504	SMD MCL4148
D106		0360601504	SMD MCL4148
D107		0360601504	SMD MCL4148
D250		0360706014	HZT33-02 RE
D300		0360601504	SMD MCL4148
D301		0360602106	Zener SMD BZM55C4V7
D350		0360601504	SMD MCL4148
D400		0360130819	1N 4148
D600		0360130819	1N 4148
D650	**25"/28"**	0360011316	BY 228/40
D651		0360601504	SMD MCL4148
D652	**25"/28"**	0360376404	ERB44-06
D652	**21"**	0470040007	Jumper Lead 0,6 mm.
D653		0360376909	ERB44-02
D654		0360601504	SMD MCL4148
D655		0360603906	Zener SMD BZM55C33
D656		0360603302	Zener SMD BZM55C15
D657		0360130819	1N 4148
D658		0360601504	SMD MCL4148
D659		0360130819	1N 4148
D660		0360130819	1N 4148
D661		0360007215	BAV21 DIODE
D663		0360376909	ERB44-02
D665		0790701106	SMD 0 Ω 1/10W.
D670		0360601504	SMD MCL4148
D671		0360377006	ERB44-04
D672		0360601504	SMD MCL4148
D673	**25"/28"**	0360005805	Zener BZX79C4V7
D674	**25"/28"**	0360602304	Zener SMD BZM55C8V2
D674	**21"**	0360602205	Zener SMD BZM55C5V1
D675		0360601504	SMD MCL4148
D676		0360602304	Zener SMD BZM55C8V2
D677		0360130819	1N 4148
D678		0360130819	1N 4148
D679		0360603005	Zener SMD BZM55C12
D680		0360603005	Zener SMD BZM55C12
D681		0360130819	1N 4148
D700		0360130819	1N 4148
D701		0360130819	1N 4148
D702		0360130819	1N 4148
D703		0360134902	Zener BXZ79C33
D704		0360601504	SMD MCL4148
D705	**25"/28"**	0360602304	Zener SMD BZM55C8V2
D705	**21"**	0360602205	Zener SMD BZM55C5V1
D750	**25"/28"**	0360603906	Zener SMD BZM55C33
D751	**25"/28"**	0360603302	Zener SMD BZM55C15
D752	**25"/28"**	0360601504	SMD MCL4148
D800		0360372411	ERC05-10B
D801		0360372411	ERC05-10B
D802		0360372411	ERC05-10B
D803		0360372411	ERC05-10B
D807		0360601504	SMD MCL4148
D808		0360376909	ERB44-02
D809		0360601504	SMD MCL4148
D811		0360601504	SMD MCL4148
D812		0360377501	Schottky AK 03 V1 30V 1A

Location		Part No.	Description
D830		0360601504	SMD MCL4148
D831		0360376909	ERB44-02
D832		0360604508	Zener SMD BZM55C10
D850	**25"/28"**	0360374409	RU4B LF-T3
D850	**21"**	0360378103	ERB44-08 800V 1A
D851		0360376008	RN4Z LF-T3
D852		0360377303	Schottky ERB84-009 90V 2A
D853		0360377204	AU01 V1 400V 0,5A
D854		0360376909	ERB44-02
D855		0360377303	Schottky ERB84-009 90V 2A
D856		0360376404	ERB44-06
D857		0360604508	Zener SMD BZM55C10
D858		0360601504	SMD MCL4148
D859		0360130819	1N 4148
D860		0360103204	Zener BZX79C5V1
D861		0360602205	Zener SMD BZM55C5V1
D863		0360601504	SMD MCL4148
D864		0360605109	Zener SMD BZM55C18
D865		0360601504	SMD MCL4148
D866		0360603609	Zener SMD BZM55C5V6
D868		0360130819	1N 4148
D869		0360601504	SMD MCL4148
D870		0360130819	1N 4148
D871		0360601504	SMD MCL4148
D872		0360605406	Zener SMD BZM55C9V1
D873		0360601504	SMD MCL4148
D874		0360601504	SMD MCL4148
D875		0360103204	Zener BZX79C5V1
D900		0360602403	Zener SMD BZM55C6V2
D901		0360602205	Zener SMD BZM55C5V1
D902		0360602205	Zener SMD BZM55C5V1
D903		0360602403	Zener SMD BZM55C6V2
D905		0360602205	Zener SMD BZM55C5V1
D906		0360602205	Zener SMD BZM55C5V1
D907		0360602205	Zener SMD BZM55C5V1
D908		0360602205	Zener SMD BZM55C5V1
D909		0360602205	Zener SMD BZM55C5V1
D910		0360602205	Zener SMD BZM55C5V1
D911		0360602205	Zener SMD BZM55C5V1
FUSES			
F-800		0760100701	Fuse Terminal Taped
F800	⚠	0330119819	Fuse T 1.6 A./250V. TIME-LAG
INTEGRATED CIRCUIT			
IC100		0360514400	SAA 5297 PS/208
IC1050	**25"/28"**	0360472401	SAA 4960 V3
IC125		0360711303	SMD SLA 24C08-SR
IC1350		0360472203	U4468B - M
IC300		0360512206	TDA 7263 M
IC350		0360472609	KA2209B
IC400	**25"/28"**	0360514301	TDA8843 N2
IC400	**21"**	0360514509	TDA8841 N2
IC701	**25"/28"**	0360514608	TDA 8350Q N5
IC701	**21"**	0360514707	TDA 8351AQ N5
IC800		0360467609	STR-F6653
IC801	⚠	0360491203	OPTO TCET1101G
IC830		0360711204	SMD TLP 165J
IC850		0360378715	KA431AZTA TO-92
IC851		0360472500	KA78L09AZTA TO92
IC852		0360472906	KA7805TU
IC853		0360472708	KA78R08TU
IC854		0360472807	KA78R05-STU
IC900		0360708804	LA 7221
J-115	**25"/28"**	0470040007	Jumper Lead 0,6 mm.
J-121		0790701106	SMD 0 Ω 1/10W.
J-140		0790701106	SMD 0 Ω 1/10W.
J-142		0790701106	SMD 0 Ω 1/10W.
J-143		0790701106	SMD 0 Ω 1/10W.
J-144		0790701106	SMD 0 Ω 1/10W.
J-147		0790701106	SMD 0 Ω 1/10W.
J-152		0790701106	SMD 0 Ω 1/10W.
J-156		0790701106	SMD 0 Ω 1/10W.
J-158	**25"/28"**	0470040007	Jumper Lead 0,6 mm.
J-240		0790701106	SMD 0 Ω 1/10W.
J-246		0790701106	SMD 0 Ω 1/10W.
J-250		0790701106	SMD 0 Ω 1/10W.

Location		Part No.	Description
J-251	**25"/28"**	0790701106	SMD 0 Ω 1/10W.
J-252		0790701106	SMD 0 Ω 1/10W.
J-264		0790701106	SMD 0 Ω 1/10W.
J-265		0790701106	SMD 0 Ω 1/10W.
J-266		0790701106	SMD 0 Ω 1/10W.
JO1050	**21"**	0790701106	SMD 0 Ω 1/10W.
JO1051	**21"**	0790701106	SMD 0 Ω 1/10W.
JO650	**21"**	0790701106	SMD 0 Ω 1/10W.
K9A		0330330002	8P. Connector
K9B		0330380007	12P. Female Connector
K9C		0330490004	Connector Assy 10P W/Wires 260 MM
COILS			
L100		0090319229	Peaking Coil 4,7 µH. 10%
L101		0090319229	Peaking Coil 4,7 µH. 10%
L102		0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L103		0620005116	Pipe Core 3,5X4,5
L1050	**25"/28"**	0090319229	Peaking Coil 4,7 µH. 10%
L1051	**25"/28"**	0090319229	Peaking Coil 4,7 µH. 10%
L1052	**25"/28"**	0090319229	Peaking Coil 4,7 µH. 10%
L1053	✷**25"/28"**	0790131908	Carbon 220 Ω 5% 1/6W.
L1054	✷**25"/28"**	0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L1054	**21"**	0790701106	SMD 0 Ω 1/10W.
L1055	✷**25"/28"**	0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L1055	**21"**	0790701106	SMD 0 Ω 1/10W.
L1350		0090319229	Peaking Coil 4,7 µH. 10%
L1351		0090206806	Adjustable Coil 292XNS-4051Z
L1352		0090319229	Peaking Coil 4,7 µH. 10%
L201		0090315029	Peaking Coil 10 µH. 10%
L250		0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L251		0090318668	Peaking Coil 1 µH. 20% I MAX=270MA
L300		0090817016	Choke Coil 12 µH. 1,2 A. 4X10
L301	✷	0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L302	✷	0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L303	✷	0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L304	✷	0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L350	✷	0090319765	Peaking Coil 22 µH. 10% I MAX=130MA
L351	✷	0090319765	Peaking Coil 22 µH. 10% I MAX=130MA
L400		0090319229	Peaking Coil 4,7 µH. 10%
L401		0090319229	Peaking Coil 4,7 µH. 10%
L402		0090319229	Peaking Coil 4,7 µH. 10%
L403		0090319229	Peaking Coil 4,7 µH. 10%
L404	✷	0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L405		0090319229	Peaking Coil 4,7 µH. 10%
L406	✷	0090316605	Peaking Coil 10 µH. 10%
L407	✷	0790126700	Carbon 100 Ω 5% 1/6W.
L408	✷**25"/28"**	0790126700	Carbon 100 Ω 5% 1/6W.
L409		0090319765	Peaking Coil 22 µH. 10% I MAX=130MA
L600	**25"/28"**	0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L600	**21"**	0090305269	Peaking Coil 6,8 µH 10% I MAX=860MA
L651	**25"/28"**	0090502709	Dynamic Correction Coil 0,85 MH.
L652	**25"/28"**	0090816828	Linearity Coil BDL-1415-039
L652	**21"**	0090816711	Linearity LH11J70SH-T10
L652A1	**25"/28"**	0640850210	Eyelet 1,6-3
L652A2		0640705117	Eyelet 2,5-3
L652A3	**21"**	0640850210	Eyelet 1,6-3
L653	**21"**	0090310806	Adjustable Width Coil 27/130 µH.
L653A	**21"**	0640850210	Eyelet 1,6-3
L654	**25"/28"**	0090817016	Choke Coil 12 µH. 1,2 A. 4X10
L655		0090304924	Choke R.F. 470 µH. 10%
L700		0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L701	✷	0090305020	Choke R.F. 2,2 µH. 10%
L702	✷	0090305020	Choke R.F. 2,2 µH. 10%
L750	**25"/28"**	0090502600	E/W Coil 5,5 MH. 10%
L800	✷⚠	0090412206	Mains Filter 2X27 MH 250VAC 1A
L802	✷	0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L804		0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L805		0620005504	Ferrite Bead 3,5X6 80 Ω/100 MHz
L850		0620005116	Pipe Core 3,5X4,5
L851		0620005116	Pipe Core 3,5X4,5
L852		0620005116	Pipe Core 3,5X4,5
L853		0620005116	Pipe Core 3,5X4,5
L854		0620005116	Pipe Core 3,5X4,5
L855		0620005116	Pipe Core 3,5X4,5
L856		0620005116	Pipe Core 3,5X4,5
L857		0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L858		0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L859		0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L860		0090305665	Peaking Coil 4,7 µH 10% I MAX=930MA
L861		0090315763	Peaking Coil 100 µH 10%
L900	✷	0090315029	Peaking Coil 10 µH. 10%
L901	✷	0090315029	Peaking Coil 10 µH. 10%
L902	✷	0090315029	Peaking Coil 10 µH. 10%
L903		0090319229	Peaking Coil 4,7 µH. 10%
L904	✷	0090315029	Peaking Coil 10 µH. 10%
L905	✷	0620011502	Ferrite SMD 0603 600 Ω/20 MHz
PCB11	⚠	0750150823	MAIN PCB EB-5A
PL100		0130209109	Push Switch L-8,35MM
PL101		0130209109	Push Switch L-8,35MM
PL102		0130209109	Push Switch L-8,35MM
PL103		0130209109	Push Switch L-8,35MM
PL104		0130209109	Push Switch L-8,35MM
PL105		0130209109	Push Switch L-8,35MM
PTC800	⚠	0810101212	Dual PTC 18 Ω +-25%
TRANSISTORS			
Q100		0360320501	BRT SMD PDTA124ET SOT-23
Q101		0360320501	BRT SMD PDTA124ET SOT-23
Q102		0360320022	SMD BC 848 B
Q104		0360320022	SMD BC 848 B
Q105		0360320022	SMD BC 848 B
Q106		0360320022	SMD BC 848 B
Q1354		0360320022	SMD BC 848 B
Q200		0360320022	SMD BC 848 B
Q201		0360320121	SMD BC 858 B
Q202		0360320121	SMD BC 858 B
Q203		0360320022	SMD BC 848 B
Q250		0360320022	SMD BC 848 B
Q251		0360189112	PH2369
Q252		0360320501	BRT SMD PDTA124ET SOT-23
Q253		0360320501	BRT SMD PDTA124ET SOT-23
Q254		0360320501	BRT SMD PDTA124ET SOT-23
Q255		0360161400	BF 370
Q256		0360320600	BRT SMD PDTC124ET SOT-23
Q300		0360320022	SMD BC 848 B
Q350		0360320600	BRT SMD PDTC124ET SOT-23
Q351		0360320600	BRT SMD PDTC124ET SOT-23
Q400		0360320022	SMD BC 848 B
Q600		0360308506	KSP 42 TO-92
Q601		0360320121	SMD BC 858 B
Q650		0360306708	S 2055 N
Q650A		0640705117	Eyelet 2,5-3
Q651		0360320022	SMD BC 848 B
Q652		0360320022	SMD BC 848 B
Q653		0360308605	KSP 92 TO-92
Q670		0360308605	KSP 92 TO-92
Q671		0360308506	KSP 42 TO-92
Q672	**25"/28"**	0360320501	BRT SMD PDTA124ET SOT-23
Q673		0360320022	SMD BC 848 B
Q700		0360320121	SMD BC 858 B
Q750	**25"/28"**	0360308605	KSP 92 TO-92
Q751	**25"/28"**	0360320600	BRT SMD PDTC124ET SOT-23
Q830		0360320121	SMD BC 858 B
Q831		0360320121	SMD BC 858 B
Q832		0360320121	SMD BC 858 B
Q850		0360320022	SMD BC 848 B
Q851		0360320600	BRT SMD PDTC124ET SOT-23
Q852		0360320022	SMD BC 848 B
Q853		0360320121	SMD BC 858 B
Q854		0360320121	SMD BC 858 B
Q855		0360320022	SMD BC 848 B
Q856		0360320022	SMD BC 848 B
Q857		0360320501	BRT SMD PDTA124ET SOT-23
Q858		0360320600	BRT SMD PDTC124ET SOT-23
Q900		0360320022	SMD BC 848 B
Q901		0360320022	SMD BC 848 B
Q902		0360320022	SMD BC 848 B
Q903		0360320121	SMD BC 858 B
RI100		0600122204	Infrared Receiver SBX8030-F

Location		Part No.	Description
RESISTORS			
R100		0790126700	Carbon 100 Ω 5% 1/6W.
R101		0790227003	R.M.G. 100 Ω 5% 1/10W
R102		0790227003	R.M.G. 100 Ω 5% 1/10W
R103		0790227003	R.M.G. 100 Ω 5% 1/10W
R104		0790227003	R.M.G. 100 Ω 5% 1/10W
R1050	**25"/28"**	0790223002	R.M.G. SMD 47 Ω 5% 1/10W.
R106		0790227003	R.M.G. 100 Ω 5% 1/10W
R107		0790126700	Carbon 100 Ω 5% 1/6W.
R108		0790227003	R.M.G. 100 Ω 5% 1/10W
R109		0790227003	R.M.G. 100 Ω 5% 1/10W
R110		0790126700	Carbon 100 Ω 5% 1/6W.
R111		0790126700	Carbon 100 Ω 5% 1/6W.
R112		0790126700	Carbon 100 Ω 5% 1/6W.
R113		0790126700	Carbon 100 Ω 5% 1/6W.
R114		0790256002	R.M.G. SMD 27 KΩ 5% 1/10W.
R115		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R116		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R117		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R118		0790126700	Carbon 100 Ω 5% 1/6W.
R120		0790233001	R.M.G. SMD 330 Ω 5% 1/10W.
R121		0790233001	R.M.G. SMD 330 Ω 5% 1/10W.
R122		0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R123		0790126700	Carbon 100 Ω 5% 1/6W.
R124		0790864102	R.M.G. SMD 1,2 KΩ 5% 1/10W.
R125		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R126		0790230007	R.M.G. SMD 180 Ω 5% 1/10W.
R127		0790155600	Carbon 22 KΩ 5% 1/6W.
R129		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R130		0790741805	R.M.G. SMD 1,5 KΩ 5% 1/10W.
R131		0790580328	Metal Film 23,7 KΩ 1% 0,4W.
R132		0790256002	R.M.G. SMD 27 KΩ 5% 1/10W.
R133		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R134		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R135		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R1356		0790229009	R.M.G. SMD 150 Ω 5% 1/10W.
R136		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R1360		0790133607	Carbon 330 Ω 5% 1/6W.
R1361		0790233001	R.M.G. SMD 330 Ω 5% 1/10W.
R1362		0790235006	R.M.G. SMD 470 Ω 5% 1/10W.
R137		0790126700	Carbon 100 Ω 5% 1/6W.
R138		0790126700	Carbon 100 Ω 5% 1/6W.
R139		0790151500	Carbon 10 KΩ 5% 1/6W.
R140		0790126700	Carbon 100 Ω 5% 1/6W.
R141		0790126700	Carbon 100 Ω 5% 1/6W.
R142		0790126700	Carbon 100 Ω 5% 1/6W.
R143		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R144		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R145		0790126700	Carbon 100 Ω 5% 1/6W.
R146		0790126700	Carbon 100 Ω 5% 1/6W.
R147		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R148		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R149		0790133607	Carbon 330 Ω 5% 1/6W.
R151		0790027502	Carbon 1 KΩ 5% 1/4W.
R152		0790138804	Carbon 1 KΩ 5% 1/6W.
R153		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R154		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R155		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R156		0790741805	R.M.G. SMD 1,5 KΩ 5% 1/10W.
R157		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R158		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R159		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R160		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R162		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R163		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R165		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R166		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R167		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R168		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R170		0790741805	R.M.G. SMD 1,5 KΩ 5% 1/10W.
R172		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R173		0790749402	R.M.G. SMD 6,8 KΩ 5% 1/10W.
R200		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R201		0790128201	Carbon 120 Ω 5% 1/4W.
R202		0790235006	R.M.G. SMD 470 Ω 5% 1/10W.
R203		0790846109	R.M.G. SMD 220 Ω 5% 1/10W.
R204		0790846109	R.M.G. SMD 220 Ω 5% 1/10W.
R205		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R206		0790846109	R.M.G. SMD 220 Ω 5% 1/10W.
R207	✷	0790223002	R.M.G. SMD 47 Ω 5% 1/10W.
R208	✷	0790223002	R.M.G. SMD 47 Ω 5% 1/10W.
R211		0790138804	Carbon 1 KΩ 5% 1/6W.
R212		0790234009	R.M.G. SMD 390 Ω 5% 1/10W.
R213		0790235006	R.M.G. SMD 470 Ω 5% 1/10W.
R214		0790235006	R.M.G. SMD 470 Ω 5% 1/10W.
R215		0790131908	Carbon 220 Ω 5% 1/6W.
R216		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R250		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R251		0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
R252		0790235006	R.M.G. SMD 470 Ω 5% 1/10W.
R253		0790263008	R.M.G. SMD 100 KΩ 5% 1/10W.
R254		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R255		0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R256		0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R257		0790564009	Metal Film 1,8 KΩ 5% 2W.
R258		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R259		0790701106	SMD 0 Ω 1/10W.
R262		0790701106	SMD 0 Ω 1/10W.
R263		0790246003	R.M.G. SMD 3,9 KΩ 5% 1/10W.
R264		0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R265		0790126700	Carbon 100 Ω 5% 1/6W.
R266		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R267		0790874101	R.M.G. SMD 2,7 KΩ 5% 1/10W.
R268		0790123400	Carbon 47 Ω 5% 1/6W.
R269		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R270		0790223002	R.M.G. SMD 47 Ω 5% 1/10W.
R271		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R300		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R301		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R302		0790243000	R.M.G. SMD 2,2 KΩ 5% 1/10W.
R303		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R304		0790131908	Carbon 220 Ω 5% 1/6W.
R305		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R306		0790131908	Carbon 220 Ω 5% 1/6W.
R307		0790111413	Carbon 4,7 Ω 5% 1/2W.
R308		0790111413	Carbon 4,7 Ω 5% 1/2W.
R309		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R310		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R311		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R312		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R313		0470040007	Jumper Lead 0,6 mm.
R350		0790123103	Carbon 47 Ω 5% 1/4W.
R351		0790123103	Carbon 47 Ω 5% 1/4W.
R352		0790711204	R.M.G. SMD 4,7 Ω 5% 1/10W.
R353		0790711204	R.M.G. SMD 4,7 Ω 5% 1/10W.
R354	⚠	0790535702	Fuse 10 Ω 5% 0,33W.
R355		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R356		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R359		0790741805	R.M.G. SMD 1,5 KΩ 5% 1/10W.
R360		0790757603	R.M.G. SMD 33 KΩ 5% 1/10W.
R361		0790741805	R.M.G. SMD 1,5 KΩ 5% 1/10W.
R362		0790757603	R.M.G. SMD 33 KΩ 5% 1/10W.
R363		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R364		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R400		0790126700	Carbon 100 Ω 5% 1/6W.
R401		0790126700	Carbon 100 Ω 5% 1/6W.
R402		0790151500	Carbon 10 KΩ 5% 1/6W.
R403		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R404		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R405		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R407		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R408		0790126700	Carbon 100 Ω 5% 1/6W.
R409		0790126700	Carbon 100 Ω 5% 1/6W.
R410		0790126700	Carbon 100 Ω 5% 1/6W.
R411		0790126700	Carbon 100 Ω 5% 1/6W.
R412		0790263008	R.M.G. SMD 100 KΩ 5% 1/10W.
R413		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R414		0790256002	R.M.G. SMD 27 KΩ 5% 1/10W.
R415		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.

Location		Part No.	Description
R416		0790784201	R.M.G. SMD 4,7 MΩ 5% 1/10W.
R417		0790784201	R.M.G. SMD 4,7 MΩ 5% 1/10W.
R418		0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R419		0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R423		0790263008	R.M.G. SMD 100 KΩ 5% 1/10W.
R424		0790256002	R.M.G. SMD 27 KΩ 5% 1/10W.
R425		0790773303	R.M.G. SMD 680 KΩ 5% 1/10W.
R426		0790758304	R.M.G. SMD 39 KΩ 1% 1/8W.
R427		0790137707	Carbon 680 Ω 5% 1/6W
R428		0790123400	Carbon 47 Ω 5% 1/6W.
R429		0790127104	Carbon 100 Ω 5% 1/4W.
R436		0790135701	Carbon 470 Ω 5% 1/6W.
R437		0790151500	Carbon 10 KΩ 5% 1/6W.
R438		0790180509	Carbon 2,2 MΩ 5% 1/4W.
R439		0790237002	R.M.G. SMD 680 Ω 5% 1/10W.
R600	**25"/28"**	0790569636	Metal Film 4,64 KΩ 1% 0,6W.
R600	**21"**	0790350508	Metal Film 2,7 KΩ 1% 0,6W.
R601		0790148100	Carbon 5,6 KΩ 5% 1/4W.
R602		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R603	**25"/28"**	0790349005	Metal Film 2,2 KΩ 5% 2W.
R603	**21"**	0470040007	Jumper Lead 0,6 mm.
R604		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R605		0790741805	R.M.G. SMD 1,5 KΩ 5% 1/10W.
R606	**25"/28"**	0790343008	Metal Film 1 KΩ 5% 1W
R606	**21"**	0790133102	Carbon 330 Ω 5% 1/4W
R607		0790123400	Carbon 47 Ω 5% 1/6W.
R650	**25"/28"**	0790578140	Metal Oxide 15 KΩ 5% 2W.
R651	**25"/28"**	0790578140	Metal Oxide 15 KΩ 5% 2W.
R651	**21"**	0790577142	Metal Oxide 12 KΩ 5% 2W.
R652	**25"/28"**	0790559223	Metal Film 820 Ω 5% 1W
R653		0790151104	Carbon 10 KΩ 2% 1/4W.
R655	**25"/28"**	0790310015	Metal Film 3,9 Ω 5% 2W.
R655	**21"**	0790532402	Metal Oxide 4,7 Ω 5% 1,5W.
R656		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R657		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R658		0790766406	R.M.G. SMD 180 KΩ 5% 1/10W.
R659		0790138804	Carbon 1 KΩ 5% 1/6W.
R660		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R661		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R662		0790131908	Carbon 220 Ω 5% 1/6W.
R663		0790048607	Carbon 10 KΩ 5% 1/4W.
R664	**21"**	0780163309	Wirewound Resistor 8,2 Ω 10% 5W.
R665	**21"**	0780559223	Metal Film 820 Ω 5% 1W.
R666	⚠**25"/28"**	0790516702	Fuse 0,47 Ω 5% 0,5W.
R666	**21"**	0790512313	Metal Film 0,33 Ω 5% 1W.
R667		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R668		0790163109	Carbon 100 KΩ 5% 1/4W.
R669		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R670		0790846109	R.M.G. SMD 220 Ω 5% 1/10W.
R671	**25"/28"**	0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R671	**21"**	0790766307	Carbon SMD 180 KΩ 5% 0,25W.
R672		0790238000	R.M.G. SMD 820 Ω 5% 1/10W.
R673		0790131106	Carbon 220 Ω 5% 1/4W.
R674	**25"/28"**	0790157408	Carbon 33 KΩ 5% 1/6W.
R674	**21"**	0790588529	Metal Film 100 KΩ 1% 0,4W.
R675		0470040007	Jumper Lead 0,6 mm.
R676	**25"/28"**	0790753909	R.M.G. SMD 15 KΩ 5% 1/10W.
R676	**21"**	0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R677		0790749402	R.M.G. SMD 6,8 KΩ 5% 1/10W.
R678		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R679	**25"/28"**	0790261002	R.M.G. SMD 68 KΩ 5% 1/10W.
R680		0790263008	R.M.G. SMD 100 KΩ 5% 1/10W.
R681		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R682		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R683		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R684		0790143606	Carbon 2,2 KΩ 5% 1/6W.
R685	**25"/28"**	0790363105	R.M.G. SMD 18 KΩ 5% 1/10W.
R686	**25"/28"**	0790701106	SMD 0 Ω 1/10W.
R686	**21"**	0790232003	R.M.G. SMD 270 Ω 5% 1/10W.
R687		0790701106	SMD 0 Ω 1/10W.
R688		0790767503	R.M.G. SMD 220 KΩ 5% 1/10W.
R700		0790351100	Metal Film 3 KΩ 1% 0,4W.
R701	⚠	0790538706	Fuse 15 Ω 5% 0,5W.
R702	**25"/28"**	0790520407	Metal Film 0,68 Ω 5% 0,61W.
R702	**21"**	0790303408	Metal Film 1,33 Ω 1% 0,6W.
R703	**25"/28"**	0790119200	Carbon 22 Ω 5% 1/2W.
R703	**21"**	0790122303	Carbon 39 Ω 5% 1/2W.
R704		0790864102	R.M.G. SMD 1,2 KΩ 5% 1/10W.
R705		0790554828	Power Metal Film 330 Ω 5% 1W.
R706		0790243000	R.M.G. SMD 2,2 KΩ 5% 1/10W.
R707		0790539001	Metal Film 18 Ω 5% 1W.
R708		0790135701	Carbon 470 Ω 5% 1/6W.
R750	**25"/28"**	0790542518	Metal Film 33 Ω 5% 2W.
R753	**25"/28"**	0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R754	**25"/28"**	0790586309	Metal Film 68 KΩ 1% 0,6W
R755	**25"/28"**	0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R756	**25"/28"**	0790233001	R.M.G. SMD 330 Ω 5% 1/10W.
R757	**25"/28"**	0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R758	**25"/28"**	0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R759	**25"/28"**	0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R800	⚠	0790180111	Carbon 2,2 MΩ 5% 1/2W.
R801	⚠	0790184113	Carbon 4,7 MΩ 5% 1/2W.
R802		0780145504	Wirewound 2,7 Ω 10% 5W.
R803		0790579411	Power Metal Film 18 KΩ 5% 2W.
R804	**25"/28"**	0790514202	Metal Film 0,43 Ω 5% 1,2W.
R804	**21"**	0790516819	Metal Film 0,51 Ω 5% 1W.
R805	**25"/28"**	0790514202	Metal Film 0,43 Ω 5% 1,2W.
R805	**21"**	0790516819	Metal Film 0,51 Ω 5% 1W.
R806		0790237002	R.M.G. SMD 680 Ω 5% 1/10W.
R807		0790115505	Carbon 10 Ω 5% 1/4W.
R808	**25"/28"**	0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
R808	**21"**	0790243000	R.M.G. SMD 2,2 KΩ 5% 1/10W.
R809		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R810	⚠	0790513014	Fuse 0,33 Ω 5% 0,5W.
R811	⚠	0790185524	Solid 5,6 MΩ 10% 1/2W.
R812	⚠	0790185524	Solid 5,6 MΩ 10% 1/2W.
R815		0790127104	Carbon 100 Ω 5% 1/4W.
R816		0790362107	Metal Film 15 KΩ 5% 1W.
R830	⚠	0790339105	Fuse 390 Ω 5% 0,5W.
R831		0790757603	R.M.G. SMD 33 KΩ 5% 1/10W.
R832		0790259006	R.M.G. SMD 47 KΩ 5% 1/10W.
R833		0790136402	Carbon 560 Ω 5% 1/2W.
R834		0790248009	R.M.G. SMD 5,6 KΩ 5% 1/10W.
R835	⚠	0790545404	Fuse 56 Ω 5% 0,5W.
R836		0790246003	R.M.G. SMD 3,9 KΩ 5% 1/10W.
R837		0790749402	R.M.G. SMD 6,8 KΩ 5% 1/10W.
R838		0790701106	SMD 0 Ω 1/10W.
R839		0790248009	R.M.G. SMD 5,6 KΩ 5% 1/10W.
R850		0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
R851		0790363105	R.M.G. SMD 18 KΩ 5% 1/10W.
R852		0790237002	R.M.G. SMD 680 Ω 5% 1/10W.
R853		0790238000	R.M.G. SMD 820 Ω 5% 1/10W.
R854		0790233001	R.M.G. SMD 330 Ω 5% 1/10W.
R855	**25"/28"**	0790588602	Metal Film 110 KΩ 1% 0,6W.
R855	**21"**	0790588701	Metal Film 100 KΩ 1% 0,6W.
R856	**25"/28"**	0790347009	R.M.G. SMD 1,78 KΩ 1% 1/8W
R856	**21"**	0790348106	R.M.G. SMD 2,05 KΩ 1% 1/8W
R857		0790766406	R.M.G. SMD 180 KΩ 5% 1/10W.
R858		0790135206	Carbon 470 Ω 5% 1/4W.
R859		0790159503	Carbon 47 KΩ 5% 1/6W
R861		0790583603	Metal Film 62 KΩ 5% 2W.
R862		0790245005	R.M.G. SMD 3,3 KΩ 5% 1/10W.
R863		0790229009	R.M.G. SMD 150 Ω 5% 1/10W.
R864		0790242002	R.M.G. SMD 1,8 KΩ 5% 1/10W.
R865		0790243000	R.M.G. SMD 2,2 KΩ 5% 1/10W.
R867		0790256002	R.M.G. SMD 27 KΩ 5% 1/10W.
R868		0790260004	R.M.G. SMD 56 KΩ 5% 1/10W.
R869		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R870		0790126700	Carbon 100 Ω 5% 1/6W.
R871		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R872	**25"/28"**	0790157408	Carbon 33 KΩ 5% 1/6W.
R872	**21"**	0790758007	Carbon 36 KΩ 5% 1/6W.
R873		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R875		0790135206	Carbon 470 Ω 5% 1/4W.
R876		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R877		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R900		0790026207	Carbon 560 Ω 5% 1/4W.
R901		0790126700	Carbon 100 Ω 5% 1/6W.

Location		Part No.	Description
R902		0790036305	Carbon 2,2 KΩ 5% 1/4W.
R903		0790026207	Carbon 560 Ω 5% 1/4W.
R904		0790126700	Carbon 100 Ω 5% 1/6W.
R905		0790036305	Carbon 2,2 KΩ 5% 1/4W.
R906		0790046403	Carbon 12 KΩ 5% 1/4W.
R907		0790888101	R.M.G. SMD 9,1 KΩ 5% 1/10W.
R908		0790125702	Carbon 75 Ω 5% 1/4W.
R909		0790125702	Carbon 75 Ω 5% 1/4W.
R910		0790046403	Carbon 12 KΩ 5% 1/4W.
R911		0790888101	R.M.G. SMD 9,1 KΩ 5% 1/10W.
R912		0790026207	Carbon 560 Ω 5% 1/4W.
R913		0790227003	R.M.G. 100 Ω 5% 1/10W
R914		0790026207	Carbon 560 Ω 5% 1/4W.
R915		0790227003	R.M.G. 100 Ω 5% 1/10W
R916		0790036305	Carbon 2,2 KΩ 5% 1/4W.
R917		0790036305	Carbon 2,2 KΩ 5% 1/4W.
R918		0790027502	Carbon 1 KΩ 5% 1/4W.
R919		0790027502	Carbon 1 KΩ 5% 1/4W.
R920		0790027502	Carbon 1 KΩ 5% 1/4W.
R921		0790027502	Carbon 1 KΩ 5% 1/4W.
R922		0790125702	Carbon 75 Ω 5% 1/4W.
R923		0790125702	Carbon 75 Ω 5% 1/4W.
R924		0790125702	Carbon 75 Ω 5% 1/4W.
R925		0790125702	Carbon 75 Ω 5% 1/4W.
R926		0790125702	Carbon 75 Ω 5% 1/4W.
R927		0790125702	Carbon 75 Ω 5% 1/4W.
R928		0790036305	Carbon 2,2 KΩ 5% 1/4W.
R929		0790036305	Carbon 2,2 KΩ 5% 1/4W.
R930		0790125702	Carbon 75 Ω 5% 1/4W.
R931		0790227003	R.M.G. 100 Ω 5% 1/10W
R932		0790227003	R.M.G. 100 Ω 5% 1/10W
R933	✷	0790234009	R.M.G. SMD 390 Ω 5% 1/10W.
R934		0790135701	Carbon 470 Ω 5% 1/6W.
R935		0790128201	Carbon 120 Ω 5% 1/4W.
R936		0790135701	Carbon 470 Ω 5% 1/6W.
R937		0790255004	R.M.G. SMD 22 KΩ 5% 1/10W.
R940		0790125702	Carbon 75 Ω 5% 1/4W.
R941		0790128201	Carbon 120 Ω 5% 1/4W.
R942		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R943		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R944		0790247001	R.M.G. SMD 4,7 KΩ 5% 1/10W.
R945		0790243000	R.M.G. SMD 2,2 KΩ 5% 1/10W.
R946		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R947		0790235006	R.M.G. SMD 470 Ω 5% 1/10W.
R948	✷	0620011502	Ferrite SMD 0603 600 Ω/20 MHz
SCR850		0360306807	Thyristor MCR22-6 400V/1,5A TO-92
SF1350	✷	0090410507	SAW Filter K9260M
SF200	✷	0090410408	SAW Filter G3964M
SW800	⚠	0140204108	Power Switch S-95 WITHOUT WIPER
S300		0330729807	Phone Jack Stereo W/Disconnection
S900		0330161407	Scart Connector 21 PIN BLACK
S901		0330161506	Scart Connector 21 PIN BLUE
S902		0330159708	3 RCA'S ASSEMBLY
TR830		0360306906	Triac BT 137-600 Lead Form 78-05W
TUNER			
TU250	✷	0850102609	Tuner UV1315AS/IEC
TRANSFORMER			
T600		0940200801	Driver Transformer 800T/20T
T650	⚠**25"/28"**	0940108707	FBT 25"/28" HFT426M
T650	⚠**21"**	0940108202	FBT 21" HFT867M
T650A		0640705117	Eyelet 2,5-3
T650CF		0330160508	FOCUS Wire FBT SANYO
T650CG	**21"**	0330160607	G2 Wire FBT
T800	⚠**25"/28"**	0930107008	Switch Transf. 110DG EB5-A 10592330
T800	⚠**21"**	0930107206	Switch Transf. 90 DG EB5-A 10603970
T800A		0640705117	Eyelet 2,5-3
VR850		0770511152	VR 220 Ω

Location		Part No.	Description
X100		0090121708	Quartz Crystal 12 MHz
X400		0090121104	Quartz Crystal, 4,4336190 MHz.

DIGITAL AUDIO PCB

CAPACITORS			
C1301		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1302		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1303		0230600504	Ceramic SMD 100 nF. 10% 25V.
C1304		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1305		0250320769	Electrolytic 10 µF. 16V.
C1306		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1307		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C1308		0230180226	Ceramic SMD 33 pF. 1% 50V.
C1309		0230180226	Ceramic SMD 33 pF. 1% 50V.
C1310		0230540205	Ceramic SMD 33 nF. 10% 50V.
C1311		0270381080	Polyester 220 nF. 10% 63V.
C1319		0230600504	Ceramic SMD 100 nF. 10% 25V.
C1320		0250410867	Electrolytic 47 µF. 16V.
C1321		0230280307	Ceramic SMD 220 pF. 5% 50V.
C1322		0230280307	Ceramic SMD 220 pF. 5% 50V.
C1323		0250410867	Electrolytic 47 µF. 16V.
C1324		0230320301	Ceramic SMD 470 pF. 10% 50V.
C1326		0230320301	Ceramic SMD 470 pF. 10% 50V.
C1328		0230320301	Ceramic SMD 470 pF. 10% 50V.
C1330		0230320301	Ceramic SMD 470 pF. 10% 50V.
C1332		0250410867	Electrolytic 47 µF. 16V.
C1333		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1334		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1335		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1336		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1338		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1339		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1340		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1341		0250320769	Electrolytic 10 µF. 16V.
C1342		0230480600	Ceramic SMD 10 nF. +80-20% 50V
C1343		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C1344		0230720203	Ceramic SMD 1 µF. 16V. +80-20%
C1380		0230600603	Ceramic SMD 100 nF. +80-20% 25V.
C1381		0250320769	Electrolytic 10 µF. 16V.
C1382		0230740003	Ceramic SMD 2,2 µF. 10V. +80-20%
C1383		0270222037	Polyester 10 nF. 5% 63V.
C1384		0270342835	Polyester 100 nF. 5% 63V.
C1385		0270101231	Polyester 1000 pF. 5% 63V.
C1386		0270222037	Polyester 10 nF. 5% 63V.
C1387		0270222037	Polyester 10 nF. 5% 63V.
C1388		0270222037	Polyester 10 nF. 5% 63V.
C1389		0270222037	Polyester 10 nF. 5% 63V.
C1390		0250320769	Electrolytic 10 µF. 16V.
C1391		0250320769	Electrolytic 10 µF. 16V.
C1392		0230740003	Ceramic SMD 2,2 µF. 10V. +80-20%
C1393		0250410867	Electrolytic 47 µF. 16V.
C1394		0270101231	Polyester 1000 pF. 5% 63V.
C1395		0270342835	Polyester 100 nF. 5% 63V.
C1396		0270222037	Polyester 10 nF. 5% 63V.
C1397		0230740003	Ceramic SMD 2,2 µF. 10V. +80-20%
C1398	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
C1399	✷	0230320301	Ceramic SMD 470 pF. 10% 50V.
DIODES			
D1300		0360111405	Varicap SMD BB 135
D1301		0360602205	Zener SMD BZM55C5V1
D1302		0360602205	Zener SMD BZM55C5V1
D1303		0360602205	Zener SMD BZM55C5V1
D1304		0360602205	Zener SMD BZM55C5V1
INTEGRATED CIRCUITS			
IC1300		0360513808	TDA 9875 V1
IC1380		0360513907	MM 1369BD
K1300A		0330330101	8P. Connector
K1300B		0330380106	12P. Male Connector
K1300C		0330198706	10 P. Connector
COILS			
L1300		0620011502	Ferrite SMD 0603 600 Ω/20 MHz

Location		Part No.	Description
L1301		0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L1302		0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L1303		0620011502	Ferrite SMD 0603 600 Ω/20 MHz
L1304		0090316506	Peaking Coil 2,2 µH.10% RADIAL
L1305		0090318924	Peaking Coil 3,3 µH.10% IMAX=210 MA
L1306		0090316506	Peaking Coil 2,2 µH.10% RADIAL
L1308		0090316506	Peaking Coil 2,2 µH.10% RADIAL
PCB14	⚠	0750150914	AUDIO PCB EB5-A
RESISTORS			
R1300		0790227003	R.M.G. 100 Ω 5% 1/10W
R1301		0790227003	R.M.G. 100 Ω 5% 1/10W
R1302		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R1303		0790239008	R.M.G. SMD 1 KΩ 5% 1/10W.
R1304		0790701106	SMD 0 Ω 1/10W.
R1305		0790258008	R.M.G. SMD 39 KΩ 5% 1/10W.
R1306		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R1307		0790754600	R.M.G. SMD 20 KΩ 5% 1/10W.
R1310		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R1311		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R1312		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R1313		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R1314		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R1315		0790752208	R.M.G. SMD 12 KΩ 5% 1/10W.
R1316		0790232003	R.M.G. SMD 270 Ω 5% 1/10W.
R1317		0790232003	R.M.G. SMD 270 Ω 5% 1/10W.
R1318		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R1319		0790701106	SMD 0 Ω 1/10W.
R1381		0790749808	R.M.G. SMD 7,5 KΩ 5% 1/10W.
R1382		0790227003	R.M.G. SMD 100 Ω 5% 1/10W
R1383		0790251003	R.M.G. SMD 10 KΩ 5% 1/10W.
R1384		0790258008	R.M.G. SMD 39 KΩ 5% 1/10W.
X1300		0090121906	Quartz Crystal 24.576 MHz

ELECTRICAL ASSY

AM 1		0010203917	Insulanting Ring HV CABLE
BRDEFL		0010203503	Wire Band 98/2.5 Natural
BRDG	**25"/28"**	0010203503	Wire Band 98/2.5 Natural
BRDGI	**25"/28"**	0010203313	Holder DC GBR-HBZ
BRDGI	**21"**	0010203404	Wire Band 430/4,8
BRDGS		0010203313	Holder DC GBR-HBZ
BRDY		0010203503	Wire Band 98/2.5 Natural
BRFEFC		0010203503	Wire Band 98/2.5 Natural
BRFH		0200099406	Wire Holding HOOK G
BRK9C		0010203503	Wire Band 98/2.5 Natural
BRSPK1		0010203503	Wire Band 98/2.5 Natural
BRSPK2		0010203503	Wire Band 98/2.5 Natural
CN.FB		0330256629	4P CONNEC. W/WireS 770+33/630+33 MM
CN.FE	⚠	0330208208	Power Cord Assy 17-212 L=2500 MM
CN.FF1		0330246901	2 WAY Connector CASE W/LEAD
CN.FF2		0330246802	2 WAY Connector CASE W/LEAD
L-800	⚠**25"**	0090257205	Degaussing Coil 25"
L-800	⚠**28"**	0090257304	Degaussing Coil 28"
L-800	⚠**21"**	0090257106	Degaussing Coil 21"
SC001		0170200406	Shield Mesh 2 mm.
SC1000		0330100009	AM SPLICE
SC1001		0010001311	Spring Ground CRT
SPK 1		0030701916	Speaker 8 Ω 12W. 120X60
SPK 2		0030701916	Speaker 8 Ω 12W. 120X60
TRC	⚠**25"**	1000107118	C.R.T. 25" A59EAK071X11 PHILIPS
TRC	⚠**28"**	1000107217	C.R.T. 28" A66EAK071X11 PHILIPS
TRC	⚠**21"**	1000107605	C.R.T. 21" A51EAL155X10 PHILIPS
TRC	⚠**21"**	1000107605	C.R.T. 21" A51EAL155X11 PHILIPS

PACKING

Location		Part No.	Description
BAT		0660100603	Dry Battery 1,5V. SUM-3F
EM 1	**25"**	0190204107	Packing Carton 25" F3PC
EM 1	**28"**	0190204206	Packing Carton 28"
EM 1	**21"**	0190204008	Packing Carton 21"
EM 2	**25"**	0190177006	Upper Cushion Assy 25" F3PAM
EM 2	**28"**	0190177204	Upper Cushion Assy 28"
EM 2	**21"**	0190177501	Upper Cushion Assy 21"
EM 3	**25"**	0190177113	Bottom Cushion Assy 25" F3PAM-A
EM 3	**28"**	0190177311	Bottom Cushion Assy 28"
EM 3	**21"**	0190177410	Bottom Cushion Assy 21"
EM10		0600122808	Remote Control EB-5A SANYO
EM13		0390238418	Electrostatic LABEL EB5-A

All information in this manual is correct at the start of production. Sanyo reserves its right to modify components and procedures in order to comply with their continuous improvement policy.